



## **FIFTEENTH ANNUAL REPORT JANUARY 2009**

Arizona Department of Health Services  
Public Health Prevention Services  
Bureau of Women's and Children's Health





## *Office of the Director*

150 N. 18<sup>th</sup> Avenue, Suite 500  
Phoenix, Arizona 85007  
(602) 542-1025  
(602) 542-1062 FAX

JANET NAPOLITANO, GOVERNOR  
JANUARY CONTRERAS, ACTING DIRECTOR

January 7, 2009

Dear Friends of Arizona's Children:

The death of a child is an enormous loss to family, friends, and community members. It is also a sentinel event that can be used to help identify other children at risk for illness or injury. Learning about the circumstances of these tragedies can empower individuals and communities to prevent not just future deaths, but also non-fatal injuries and disabilities among other children.

In 2007, 1,143 children younger than 18 years of age died in Arizona. Local Child Fatality Review Teams reviewed every child death that occurred in Arizona during 2007 and determined that 390 deaths could have been prevented. Children ages 15 through 17 years had the highest percentage of preventable deaths (76 percent), and more than half of all deaths among children ages one through 14 years could have been prevented (51 percent).

Seventeen percent of all child deaths in 2007 involved illegal drugs, prescription drugs, and/or alcohol (n=198), and there were 24 deaths due to poisoning. Half of the substances used in poisoning deaths were prescription medications (n=12), with opiate painkillers identified most frequently (n=9). Twenty percent of child deaths in 2007 were due to accidents, and the most common cause of accidental deaths was motor vehicle crashes, which claimed 120 children's lives. There were 143 unexpected infant deaths in Arizona during 2007, and 89 of these deaths occurred in unsafe sleeping environments.

In order to prevent future child deaths in Arizona, the State Child Fatality Review Team made several important recommendations which call for specific actions including the proper storage of prescription drugs, additional child passenger safety legislation, and infant safe sleep education.

With each child who dies, part of our future is gone. We must take advantage of every opportunity to stop preventable deaths in our homes, on our streets, and in our communities.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jan T.C.", written over the typed name.

January Contreras  
Acting Director  
Arizona Department of Health Services

A handwritten signature in dark ink, appearing to read "Mary E Rimsza MD", written over the typed name.

Mary Ellen Rimsza, MD, FAAP  
Editor, PREP the Curriculum  
American Academy of Pediatrics  
Professor of Pediatrics  
University of Arizona

JS:JS:tg



***Leadership for a Healthy Arizona***

Janet Napolitano, Governor  
State of Arizona

January Contreras, Acting Director  
Arizona Department of Health Services

**MISSION:**

Setting the standard for personal and community health through direct care delivery,  
science, public policy, and leadership

Arizona Department of Health Services  
Public Health Prevention Services  
Bureau of Women's and Children's Health  
Child Fatality Review Program  
150 North 18<sup>th</sup> Avenue, Suite 320  
Phoenix, AZ 85007  
(602) 364-1400

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## **ACKNOWLEDGMENTS**

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The Arizona Child Fatality Review Team and the Arizona Department of Health Services would like to acknowledge all state and local child fatality review team members who have volunteered their time for at least five years. The many hours of hard work over the years has led to several improvements in the Child Fatality Review Program. These individuals, as well as the other volunteers on the teams, truly make a difference in the lives of children in Arizona.

### **Apache County**

Matrese Avila  
Cris Candelaria  
Mike Downs  
Fred Frazier  
Peggy Hart  
Mike Hogan  
Donny Jones  
Mike Nuttall  
Jim Pierson  
Brenda Plumb  
Ann Russell  
Keli Sine-Shield

### **Maricopa County**

Kathy Coffman  
Cindy Copp  
Ilene Dode  
Timothy Flood  
Susan Hallett  
Richard Johnson  
Karin Kline  
Terence Mason  
Susan Newberry  
Deborah Perry  
Nancy Quay  
Mary Ellen Rimsza  
Zannie Weaver

### **Mohave County**

Vic Oyas  
Daniel Wynkoop  
Leslie DeSantis  
Lynn Crane

Jennifer McNally  
Patty Mead  
Detective Steve Parker  
Melissa Register

### **Pima County**

Susan Anderson  
Kathy Bowen  
Lori Groenewald  
Joan Mendelson  
Brenda Neufeld  
Bruce Parks  
Cindy Porterfield  
Carol Punske  
Audrey Rogers

### **Pinal County**

JoAnne Pinto

### **Yuma County**

Patti Perry  
Jim Miller  
Alice Nelson

### **State Child Fatality Review Team**

Kathy Bowen  
Tim Flood  
Janice Mickens  
Gaylene Morgan  
Mary Ellen Rimsza  
Beth Rosenberg  
Roy Teramoto  
David Winston

## EXECUTIVE SUMMARY

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The Arizona Child Fatality Review Program was created in 1993 (A.R.S. § 36-342, 36-3501-4) and data collection began in 1994. Reviews of child deaths are completed by 12 local child fatality teams located throughout Arizona. The state team provides oversight to the local teams and produces an annual report summarizing review findings. As defined in statute, each year the state team makes recommendations regarding the prevention of child deaths. These recommendations have been used to educate communities, initiate legislative action, and develop prevention programs. The Arizona Department of Health Services provides professional and administrative support to the state and local teams and analyzes data from all death reviews.

**In 2007, 1,143 children younger than 18 years of age died in Arizona.** Arizona Child Fatality Review Teams reviewed 100 percent of child deaths and determined that 390 deaths could have been prevented. Preventable child deaths decreased from 39 percent in 2006 to 34 percent in 2007. Children ages 15 through 17 years had the highest percentage of preventable deaths (76 percent), and more than half of all deaths among children ages one through 14 years could have been prevented (51 percent). In contrast, 18 percent of deaths among infants younger than one year of age were determined to have been preventable.

**Seventeen percent of all child deaths involved illegal drugs, prescription drugs, and/or alcohol (n=198).** This was an increase from 2006 when substance use was involved in 12 percent of all child deaths (n=140). Substance use contributed to 50 percent of child suicides (n=14), 39 percent of accidental deaths (n=88), and 32 percent of child homicides (n=21).

**Twenty percent of child deaths in 2007 were due to accidents, and teams determined that 94 percent of these deaths were preventable. The most common cause of accidental deaths was motor vehicle crashes,** which claimed 120 children's lives in 2007 (a decrease from 2006 when 164 children died in motor vehicle crashes). Nine children died in all terrain vehicle (ATV) crashes. For 53 deaths, excessive driving speed was identified as a preventable factor, and lack of vehicle restraints was identified as a preventable factor for 50 motor vehicle crash fatalities. Twenty-six children died in crashes involving a substance-impaired driver (23 were impaired by alcohol).

**There were 24 deaths due to poisonings in 2007, compared to 11 in 2006.** Eighty-three percent of poisonings were accidental (n=20). Twenty-nine percent were listed as unintentional overdoses (n=7) and 50 percent were acute intoxications (n=12). **Half of the substances used in poisoning deaths were prescription medications (n=12), with opiate painkillers identified most frequently (n=9).** This was an increase from 2006, when only three poisoning deaths were due to opiates. One hundred percent of poisoning deaths were determined to have been preventable.

**In 2007, there were 65 child deaths due to maltreatment, which was an increase from 60 child maltreatment deaths in 2006. There were 11 fatalities among children two years of age and younger due to abusive head trauma during 2007.**

This was an increase from 2006, when nine children two years of age and younger died as a result of abusive head trauma. Ninety-four percent of maltreatment deaths were determined to have been preventable. Drugs and/or alcohol contributed to 42 maltreatment deaths.

**There were 143 unexpected infant deaths in Arizona during 2007. This was an increase from 2006 when 90 infants died unexpectedly.** In 2007, suffocation was the cause of 30 unexpected infant deaths, and 37 deaths were identified as Sudden Infant Death Syndrome (SIDS). Ninety-nine unexpected infant deaths occurred in sleeping environments, and **89 of these environments were determined to have been unsafe.** Thirty children were placed to sleep on their stomachs or on their sides. Fifty-nine children were co-sleeping with other children or adults. For 44 unexpected infant deaths, at least one parent was using drugs and/or alcohol at the time of the death.

## **Key Findings**

- 34 percent of children's deaths could have been prevented in 2007, compared to 39 percent in 2006.
- Hispanic children comprised 39 percent of the Arizona population during 2007, but 46 percent of the child deaths.
- Prematurity accounted for 28 percent of all child deaths (n=321) and was the second highest cause of death in 2007.
- 17 percent of all child deaths involved substance use (illegal drugs, prescription drugs, and/or alcohol), compared to 12 percent in 2006.
- 122 children died in motor vehicle crashes, compared to 164 in 2006. As in previous years, motor vehicle crashes were the leading cause of preventable deaths among children.
- Nine children died in all terrain vehicle (ATV) crashes.
- Deaths due to poisonings increased from 11 in 2006 to 24 in 2007. Half of the poisoning deaths in 2007 were due to prescription medications.
- Drowning deaths declined from 31 in 2006 to 23 in 2007.
- Suicides declined from 48 in 2006 to 28 in 2007.
- Homicides increased from 63 in 2006 to 66 in 2007.
- Deaths due to firearm-related injuries declined from 60 in 2006 to 48 in 2007.
- Deaths due to maltreatment increased from 60 in 2006 to 65 in 2007.
- Unexpected infant deaths increased from 90 in 2006 to 143 in 2007. Eighty-nine of these deaths occurred in unsafe sleeping environments.



## Successes Related to Past Recommendations

Previous recommendations (from the 2006 and 2007 Annual Reports) have focused on the involvement of methamphetamines in child deaths, and there has been a statewide increase in public education regarding the dangers of methamphetamine use. Although the number of child deaths that involved methamphetamine use did increase slightly in 2007 (from 43 in 2006 to 48 in 2007), the increase was not as great as has been seen in previous years.

In the 2006 and 2007 Annual Reports, the State Child Fatality Review Team recommended an increase in pool safety education and strengthening of local pool barrier ordinances. These efforts, combined with the work of the Drowning Prevention Coalition of Central Arizona, may have contributed to the decline in child drowning deaths observed in 2007 (from 31 in 2006 to 23 in 2007).

Previous recommendations (from the 2006 and 2007 Annual Reports) have addressed the need to increase awareness of the signs of children at risk for suicide. The Arizona Suicide Prevention Coalition continued to provide public education regarding suicide risk factors and prevention resources. The Arizona State Suicide Plan is currently being updated to address suicide prevention strategies for the next five years. The work of the many agencies who contribute to the State Suicide Plan may have played a role in the decline in child suicides observed in 2007 (from 48 in 2006 to 28 in 2007).

In the 2006 Annual Report, there was a recommendation to increase education regarding the proper storage of firearms. The Arizonans for Gun Safety Coalition and the Arizona Firearm Injury Prevention Coalition have strengthened efforts to educate children and parents on firearm-related injury prevention. The Child Fatality Review Program observed a decline in firearm-related deaths among children in 2007.

## RECOMMENDATIONS

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In order to prevent future child deaths in Arizona, the State Child Fatality Review Team recommends specific actions related to the following areas of concern:

**1. Child deaths involving substance use increased 41 percent (from 140 in 2006 to 198 in 2007). There were 12 deaths due to poisonings from prescription medications, including nine children who overdosed on opiates.**

*Recommendation to the Prescription Drug Subcommittee of the Arizona Substance Abuse Partnership:* Develop education materials for parents with children of all ages regarding the safe storage and disposal of prescription medications. These culturally competent materials should be provided in English and Spanish to medical providers and pharmacists for distribution.



*Recommendation to the Arizona Department of Health Services Division of Behavioral Health Services:* Seek funding to continue efforts to improve youth substance abuse treatment services and accessibility to treatment, including the Arizona Underage Drinking Prevention Committee's *Draw the Line* Campaign and the Arizona Substance Abuse Partnership.

*Resources for more information on substance use prevention:*

Arizona *Draw the Line* Campaign (<http://www.drawyourline.com>)

Arizona Substance Abuse Partnership (<http://gocyf.az.gov/SAP>)

Arizona Department of Health Services Division of Behavioral Health Services (<http://www.azdhs.gov/bhs>)

**2. Of the 11 five through nine year olds who died as passengers in motor vehicle crashes, eight were not properly restrained.**

*Recommendation to the Arizona Legislature:* Pass legislation that requires the use of booster seats for children who are between five and nine years of age and are less than four feet, nine inches in height.

*Resources for more information on child passenger safety:*

National Highway Traffic Safety Administration (<http://www.nhtsa.gov>)

Safe Kids (<http://www.usa.safekids.org/skbu/cps/boosters.html>)

**3. Nine children died in all terrain vehicle (ATV) crashes. Six of these children were not wearing helmets.**

*Recommendation to the Arizona Department of Health Services:* Collaborate with law enforcement, Arizona State Parks, and the Arizona Game and Fish Department to develop culturally competent public service announcements and public information messages in English and Spanish to educate parents regarding the dangers associated with children riding or driving all terrain vehicles.

*Recommendation to the Arizona Department of Transportation:* Create a new class for all terrain vehicle registration to enable enhanced, consistent injury surveillance and monitoring of all terrain vehicle usage in Arizona.

*Resources for more information on all terrain vehicle injury prevention:*

Aitken ME, Graham CJ, Killingsworth JB, Mullins SH, Parnell DN, Dick RM. All-terrain vehicle injury in children: strategies for prevention. *Injury Prevention*. 2004; 10:303–307. American Academy of Pediatrics. Policy Statement: All-Terrain Vehicle Injury Prevention: Two-, Three-, and Four-Wheeled Unlicensed Motor Vehicles. *Pediatrics*. 2000; 105:1352–1354 (Policy statement was reaffirmed in January of 2007).

**4. Twenty percent of all child deaths in 2007 were due to unintentional injuries, and 94 percent of these deaths were preventable. In 2007, 95 children younger than five years of age died due to accidental injuries.**

*Recommendation to First Things First:* Fund culturally competent injury prevention programs that target injuries among children five years of age and younger.

*Resources for more information on injury prevention:*

Arizona Department of Health Services Injury Prevention Program

(<http://www.azdhs.gov/phs/owch/injuryprev.htm>)

First Things First (<http://www.azecdhs.gov> or <http://www.azftf.gov>)

Safe Kids (<http://www.usa.safekids.org>)

**5. Unexpected infant deaths increased 59 percent (from 90 in 2006 to 143 in 2007). Eighty-nine unexpected infant deaths occurred in unsafe sleeping environments.**

*Recommendation to the Arizona Governor:* Declare a month in 2009 “Infant Safe Sleep Awareness Month.”

*Recommendation to the Unexplained Infant Death Council and First Things First:*

Collaborate with the Arizona Department of Health Services Bureau of Women’s and Children’s Health to implement a culturally competent Infant Safe Sleep Campaign in Arizona. This should include the distribution of educational materials in English and Spanish to child care facilities, emergency and transitional housing programs, and other appropriate agencies.

*Recommendation to all birthing hospitals and Public Health Agencies in Arizona:*

Incorporate culturally competent education messages in English and Spanish regarding infant safe sleep for all new parents.

*Recommendation to the Arizona Local Child Fatality Review Teams:* Collaborate with local community organizations to assist their communities in establishing Cribs for Kids Programs (or other similar programs), which provide cribs for families who cannot afford them.

*Resources for more information on prevention of unexpected infant deaths:*

Cribs for Kids (<http://www.cribsforkids.org>)

National Back to Sleep Campaign (<http://www.nichd.nih.gov/sids>)

**6. There were 321 deaths due to prematurity in 2007, making it the second highest cause of death for children in Arizona.**

Optimizing a woman's health and knowledge before and between pregnancies--referred to as preconception care--is a recognized public health strategy for improving birth outcomes and infant health. In 2006, the Centers for Disease Control and Prevention (CDC) published ten recommendations for improving the health of women before pregnancy.

*Recommendation to the Arizona Biomedical Research Commission:* Support ongoing research into the causes and prevention of premature births.

*Recommendation to all Public Health Agencies and health care providers in Arizona:* Implement the CDC recommendations to improve preconception health care.

*Resources for more information on prematurity and preconception care:*

Centers for Disease Control and Prevention: Preconception Care

(<http://www.cdc.gov/ncbddd/preconception>)

March of Dimes Fact Sheet for Health Professionals

(<http://www.marchofdimes.com/professionals/143321156.asp>)

**7. Seven children died due to asthma in 2007, compared to five asthma-related deaths in 2006.**

*Recommendation to the Arizona Department of Health Services and the Arizona Asthma Coalition:* Develop a culturally competent public education campaign in English and Spanish regarding the symptoms of severe asthma attacks and the need for parents and caregivers to seek immediate medical attention when these symptoms are observed in children.

*Resources for more information on asthma education:*

Arizona Asthma Coalition (<http://www.azasthma.org>)

Arizona Department of Health Services Asthma Control Program

(<http://azdhs.gov/phs/cdpc/asthma>)

**8. Sixty-five children died due to maltreatment in 2007, compared to 60 in 2006. Ninety-four percent of these deaths were determined to have been preventable.**

*Recommendation to all agencies that provide services to families, including social service agencies, law enforcement, schools, and medical providers:* To help prevent future child maltreatment deaths, report any suspicions of abuse or neglect to the Child Protective Services' Child Abuse Hotline (1-888-SOS-CHILD) immediately.

Recommendation to all agencies involved in a suspected child maltreatment death, including law enforcement, medical examiners, and hospitals: Report every suspected child maltreatment death to the Child Protective Services' Child Abuse Hotline (1-888-SOS-CHILD) promptly, even if there are no other children in the home.

Recommendation to the Arizona Department of Economic Security Division of Children, Youth, and Families: Communicate with all law enforcement agencies, medical examiner's offices, and hospitals in Arizona to remind mandatory reporters of their obligation to report all suspicious deaths to Child Protective Services.

Recommendation to the Arizona Local Child Fatality Review Teams: Report every child maltreatment death to the Child Protective Services' Child Abuse Hotline (1-888-SOS-CHILD) as soon as possible after the completed team review.

*Resources for more information on prevention of child maltreatment deaths:*

Arizona Department of Economic Security Child Protective Services

(<http://www.azdes.gov>)

Childhelp (<http://www.childhelp.org>)

Never Shake a Baby Arizona (<http://www.nsbaz.org>)

Prevent Child Abuse Arizona (<http://www.pcaaz.org>)

## INTRODUCTION

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The Arizona Child Fatality Review Program was created in 1993 (A.R.S. § 36-342, 36-3501-4) and data collection began in 1994. A state team is mandated by statute to produce an annual report summarizing the findings. The state team is also authorized to study the adequacy of existing statutes, ordinances, rules, training, and services to determine what changes are needed to decrease the number of preventable child fatalities. Further, the state team is charged with educating the public regarding the number and causes of child fatalities. By statute, the state team includes representatives of:

- Attorney General's Office
- Bureau of Women's and Children's Health in the Department of Health Services
- Division of Behavioral Health in the Department of Health Services
- Division of Developmental Disabilities in the Department of Economic Security
- Governor's Office for Children
- Administrative Office of the Courts
- Arizona Chapter of the American Academy of Pediatrics
- Medical Examiner's Office
- Maternal Child Health Specialist who works with members of Tribal Nations
- Private nonprofit organization of Tribal Governments
- The Navajo Nation

- United States Military Family Advocacy Program
- Unexplained Infant Death Council
- Prosecuting Attorney's Advisory Council
- Law Enforcement Officer's Advisory Council with experience in child homicide
- Association of County Health Officers
- Child Advocate not employed by the state or a political subdivision of the state
- A member of the public

Actual reviews of child deaths are conducted by 12 local child fatality review teams. These teams are located throughout the state and must include local representatives from child protective services, a county medical examiner's office, a county health department, law enforcement, and a county prosecuting attorney's office. Membership also includes a pediatrician or family physician, a psychiatrist or psychologist, a domestic violence specialist, and a parent.

### **Child Fatality Review Process**

When a child dies in Arizona, a copy of the death certificate is sent to the appropriate Local Child Fatality Review Team. The local team coordinator or chairperson then requests the child's autopsy report, hospital records, Child Protective Services records, law enforcement reports, and any other relevant documents that may provide insight into the death. If the child was younger than one year of age at the time of death, then the birth certificate is also reviewed. Legislation requires that hospitals and state agencies release this information to the Arizona Child Fatality Review Program's local teams. Team members are required to maintain confidentiality and are prohibited from contacting the child's family.

According to the National Center for Child Death Review ([www.childdeathreview.org](http://www.childdeathreview.org)), there are six steps to a quality review of a child's death:

1. Share, question, and clarify all case information.
2. Discuss the investigation that occurred.
3. Discuss the delivery of services (to family, friends, schoolmates, community).
4. Identify risk factors (preventable factors or contributing factors).
5. Recommend systems improvements (based on any identified gaps in policy or procedure).
6. Identify and take action to implement prevention recommendations.

Next, the local team completes a standardized Child Death Review Case Report (version 2.0) that includes extensive information regarding the circumstances surrounding the death. The Case Report was created by the National Center for Child Death Review.

Local Child Fatality Review Teams review deaths throughout the year and submit all reviews to the Child Fatality Review Program by August 15<sup>th</sup> of the following year. This deadline is necessary so that the Arizona Department of Health Services and the State Child Fatality Review Team can prepare the annual report, which is typically published

each November. If a team has not completed a review by the August 15<sup>th</sup> deadline, the death will not be included in the published report. Staff members within the Arizona Department of Health Services Bureau of Women's and Children's Health enter all submitted Case Reports into a database created by the National Center for Child Death Review. The Arizona Department of Health Services provides professional and administrative support for the teams, and analyses of the data are completed by staff within the Bureau of Women's and Children's Health.

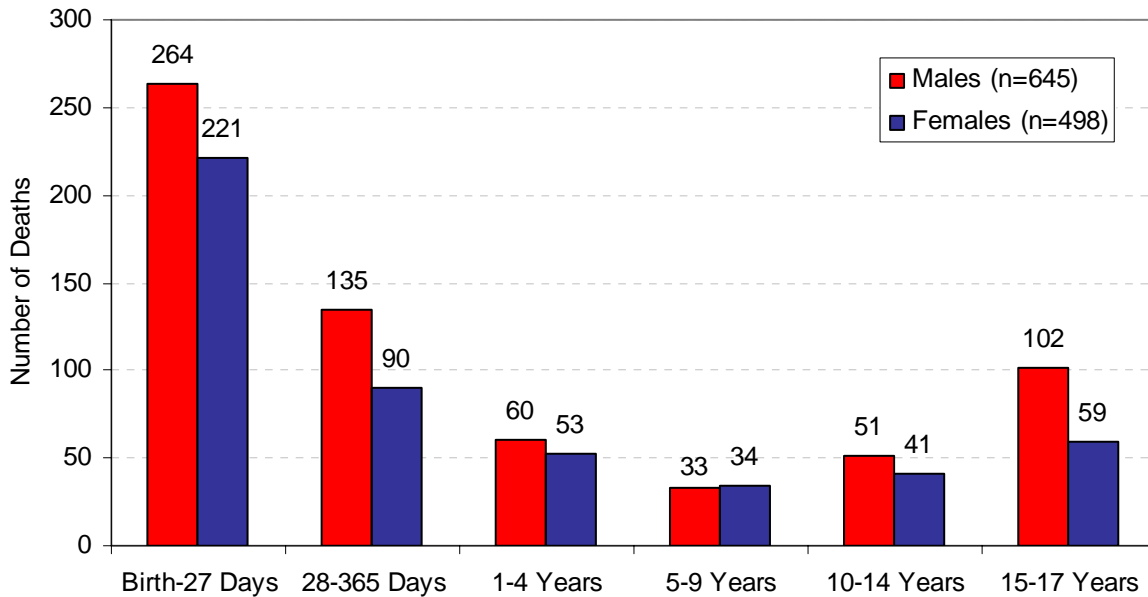
This is the fifteenth annual report issued by the Arizona Child Fatality Review Program. Each year, the state team has made recommendations regarding the prevention of child deaths. These recommendations are evidence-based and have been used to educate communities, initiate legislative action, and develop prevention programs. Because these reviews are completed by a multidisciplinary team of well-respected professionals, the team's recommendations are often adopted.

## **2007 DEMOGRAPHICS**

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During 2007, there were 1,143 fatalities among children younger than 18 years in Arizona. This was a decrease from 2006 when 1,161 children died, despite the fact that the population of children increased by two percent in Arizona in 2007. Males accounted for 56 percent of deaths (n=645) and females accounted for 44 percent (n=498). More males died in each age group, except for five through nine years, where there was one more death among girls. Figure 1 shows deaths among children by age group and sex.

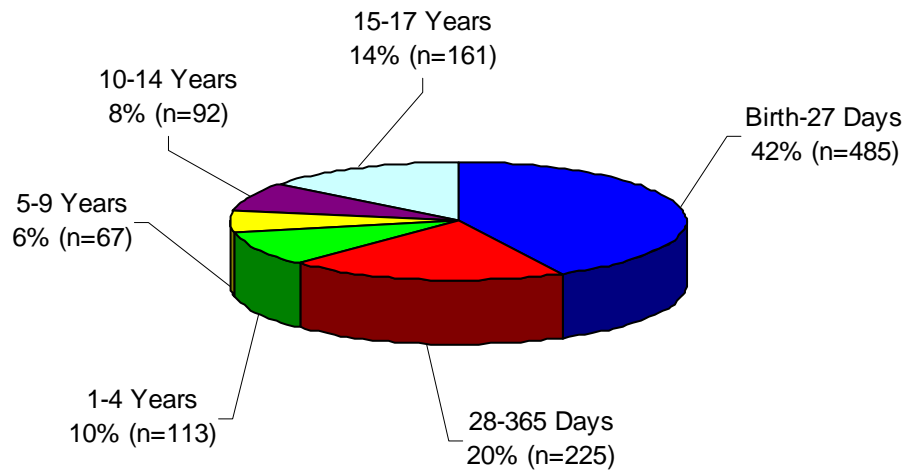
**Figure 1. Deaths Among Children by Age Group and Sex, Arizona 2007 (n=1,143)**



The largest percentage of deaths was among infants younger than 28 days (42 percent, n=485), 20 percent of deaths were among infants ages 28 days through 365 days (n=225), ten percent were among children ages one through four years (n=113), six percent were among children ages five through nine years (n=67), eight percent were among children ages 10 through 14 years (n=92), and 14 percent were among children ages 15 through 17 years (n=161). Figure 2 shows deaths among children by age group.

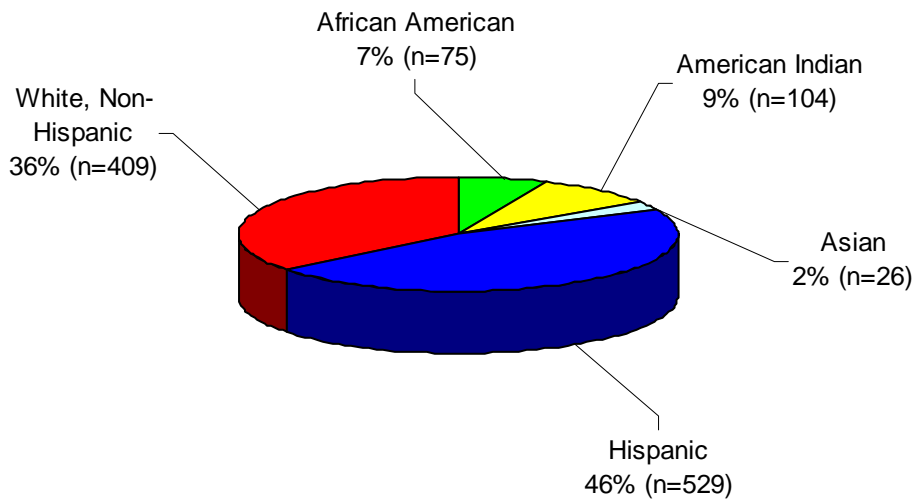


**Figure 2. Deaths Among Children by Age Group, Arizona 2007 (n=1,143)**



Forty-six percent of child deaths were among Hispanics (n=529), 36 percent were among Non-Hispanic Whites (n=409), nine percent were among American Indians (n=104), seven percent were among African Americans (n=75), and two percent were among Asians (n=26). Figure 3 shows deaths among children by race/ethnicity.

**Figure 3. Deaths Among Children by Race/Ethnicity, Arizona 2007 (n=1,143)**



Deaths were over-represented among three racial/ethnic groups. African American children comprised five percent of the population in Arizona, but seven percent of the fatalities. American Indian children comprised seven percent of the population and nine percent of deaths. Hispanic children accounted for 39 percent of the population and 46 percent of child fatalities. Figure 4 shows deaths among children by race/ethnicity compared to population percentages.

**Figure 4. Deaths Among Children by Race/Ethnicity Compared to Population, Arizona 2007**

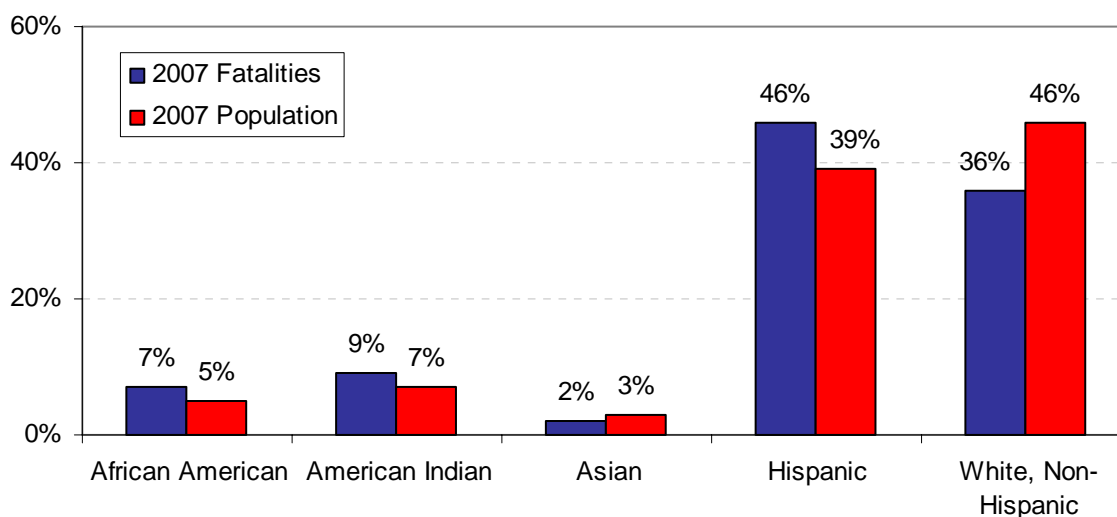


Table 1 shows deaths among children by county of residence. There were increases in the percentages of deaths among children who resided in Gila, Graham, Navajo, and Pinal Counties in 2007. The population of children declined (two percent each) in Gila, Graham, and Navajo Counties in 2007, while the population of children increased nine percent in Pinal County. The percentage of children who died in 2007 declined in Yavapai County, even though the population of children in that county increased three percent.

Table 1. Deaths Among Children by County of Residence, Arizona 2006-2007				
County of Residence	2006 (n=1,161)		2007 (n=1,143)	
	Number of Deaths	Percent of Deaths	Number of Deaths	Percent of Deaths
Apache	17	1%	13	1%
Cochise	28	2%	27	2%
Coconino	26	2%	25	2%
Gila	6	<1%	17	1%
Graham	8	<1%	12	1%
Greenlee	1	<1%	0	--
La Paz	3	<1%	1	<1%
Maricopa	664	57%	648	57%
Mohave	28	2%	27	2%
Navajo	25	2%	39	3%
Pima	147	13%	148	13%
Pinal	62	5%	64	6%
Santa Cruz	9	<1%	6	<1%
Yavapai	33	3%	28	2%
Yuma	33	3%	35	3%
Outside Arizona	71	6%	53	5%
<b>Total</b>	<b>1,161</b>		<b>1,143</b>	

## CHILD FATALITY REVIEW FINDINGS

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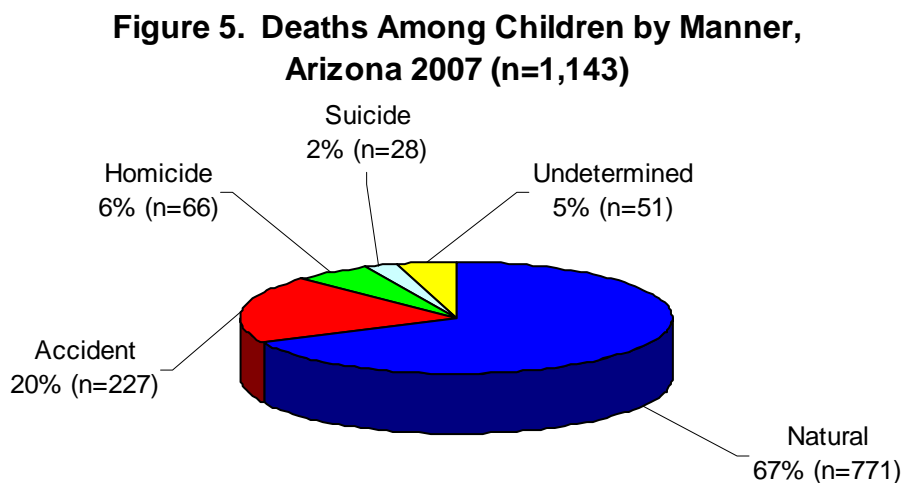
### Cause and Manner of Child Fatalities

Cause of death refers to the injury or medical condition that resulted in death (e.g. firearm-related injury, pneumonia, cancer). Manner of death is not the same as cause of death, but specifically refers to the intentionality of the cause. For example, if the cause of death was a firearm-related injury, then the manner of death may have been intentional or unintentional. If it was intentional, then the manner of death was suicide or homicide. If it was unintentional, then the manner of death was an accident. In some cases, there was insufficient information to determine the manner of death, even though the cause was known. It may not have been clear that a firearm death was due to an accident, suicide, or homicide, and in these cases, the manner of death was listed as undetermined. Manners of death include:

- natural (e.g., cancer)
- accident (e.g., unintentional car crash)
- homicide (e.g., intentional assault)
- suicide (e.g., self-inflicted intentional firearm injury)
- undetermined.

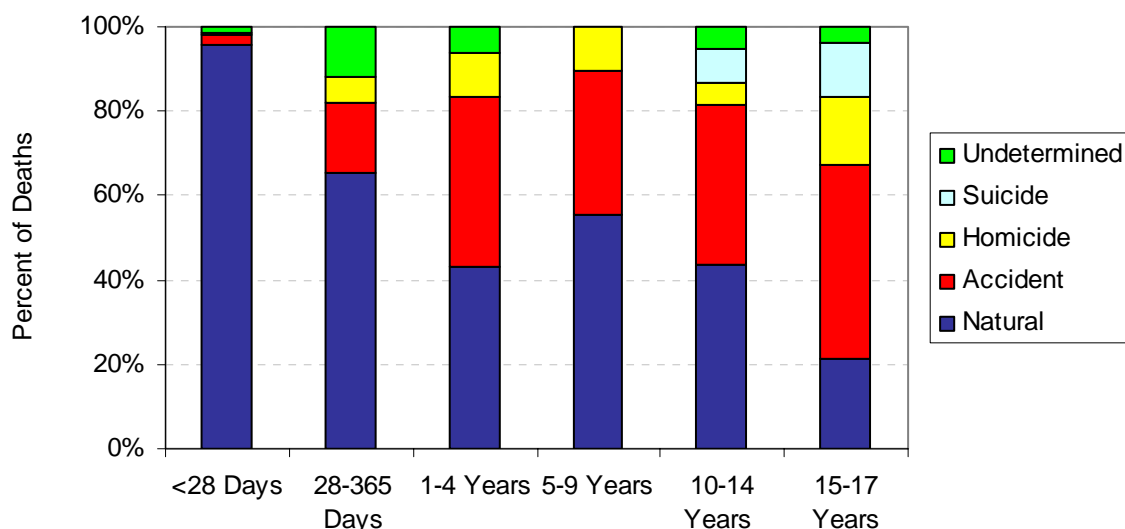
In addition to reviewing medical examiner reports, Child Fatality Review Teams also review records from hospitals, emergency departments, law enforcement, Child Protective Services, and other sources. As a result of this comprehensive, multidisciplinary approach, the teams' determinations of cause and manner sometimes differ from those recorded on the death certificates.

Natural deaths accounted for 67 percent of all child deaths during 2007 (n=771), 20 percent of child deaths were accidents (n=227), six percent were homicides (n=66), two percent were suicides (n=28), and five percent were of undetermined manner (n=51). Figure 5 shows deaths among children by manner.



The distribution of manner of death varied by age group. Deaths among infants were primarily due to natural causes, while accidental deaths were more common among older children. Suicide occurred only among the older age groups, but included children as young as 11 years old. Homicide occurred in all age groups. Figure 6 shows manner of child deaths by age group.

**Figure 6. Manner of Child Deaths by Age Group, Arizona 2007 (n=1,143)**



There were declines in the percentages of deaths due to accidents and suicides and an increase in natural deaths in 2007. There were also increases in homicides and deaths of undetermined manner. Table 2 shows deaths among children by manner for 2006 and 2007.

Manner	2006		2007	
Natural	743	64%	769	67%
Accident	270	23%	227	20%
Homicide	63	5%	66	6%
Undetermined	37	3%	53	5%
Suicide	48	4%	28	2%
<b>Total</b>	<b>1,161</b>		<b>1,143</b>	

There were 420 deaths due to medical conditions, including seven asthma-related deaths. In 2006, there were five deaths among children due to asthma. In 2007, there were 321 deaths due to prematurity in 2007 and 37 deaths due to SIDS. There were 122 motor vehicle-related deaths and 23 drownings. The leading cause of death for homicides was firearm-related injuries.

There were eight deaths due to exposure in 2007 (hyperthermia). Four of these children died while crossing the Mexico-United States border, one died during outdoor recreation, and three children were left in vehicles. All of the children left in vehicles were younger than one year of age. Table 3 shows deaths among children by cause and manner.

Table 3. Deaths among Children Birth Through 17 Years by Cause and Manner, Arizona 2007 (n=1,143)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical*		2		413	5	420
Prematurity				321		321
Motor vehicle crash	120	1	1			122
Firearm injury	5	30	11		2	48
SIDS				37		37
Undetermined		1			33	34
Other	11	9	3		10	33
Suffocation	25	2				27
Poisoning	20	2	2			24
Drowning	22	1				23
Blunt force trauma		18				18
Hanging	1		11		1	13
Fall/crush	9					9
Exposure	8					8
Fire/burn	6					6
<b>Total</b>	<b>227</b>	<b>66</b>	<b>28</b>	<b>771</b>	<b>51</b>	<b>1,143</b>
*Excluding SIDS and prematurity						

Prematurity as a proportion of all child deaths increased by three percent in 2007 compared to 2006. There were also increases in the percentages of deaths due to SIDS and poisonings in 2007 and declines in the percentages of child deaths due to motor vehicle crashes, drowning, firearms, hangings, and suffocation. Table 4 shows deaths among children by cause for 2006 and 2007.

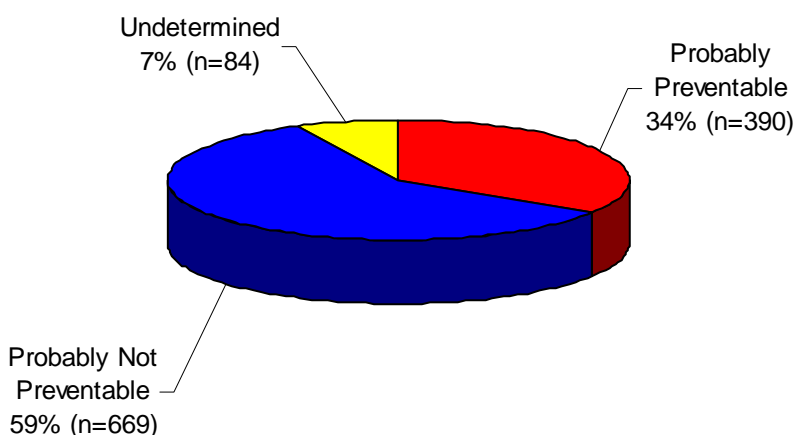
Table 4. Deaths Among Children Birth Through 17 Years by Cause, Arizona 2006-2007				
Cause	2006		2007	
Medical*	426	37%	420	37%
Prematurity	294	25%	321	28%
Motor vehicle crash	164	14%	122	11%
Firearm injury	60	5%	48	4%
SIDS	29	2%	37	3%
Undetermined	22	2%	34	3%
Other	14	2%	33	3%
Suffocation	34	3%	27	2%
Poisoning	11	1%	24	2%
Drowning	31	3%	23	2%
Blunt force trauma	26	2%	18	1%
Hanging	23	2%	13	1%
Fall/crush	9	1%	9	1%
Exposure	9	1%	8	1%
Fire/burn	9	1%	6	1%
<b>Total</b>	<b>1,161</b>		<b>1,143</b>	
*Excluding SIDS and prematurity				

## PREVENTABILITY

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In Arizona, the child fatality review process is grounded in the principles of public health and is focused on the prevention of all child deaths. Child Fatality Review Teams consider a child's death preventable if something could have been done (by an individual such as the caregiver or supervisor, or by the community as a whole) that could have prevented the death. Child Fatality Review Teams determined that 390 child deaths in 2007 were preventable (34 percent). This was a decrease from 2006, when 39 percent of deaths were determined to have been preventable (n=454). Figure 7 shows deaths among children by preventability.

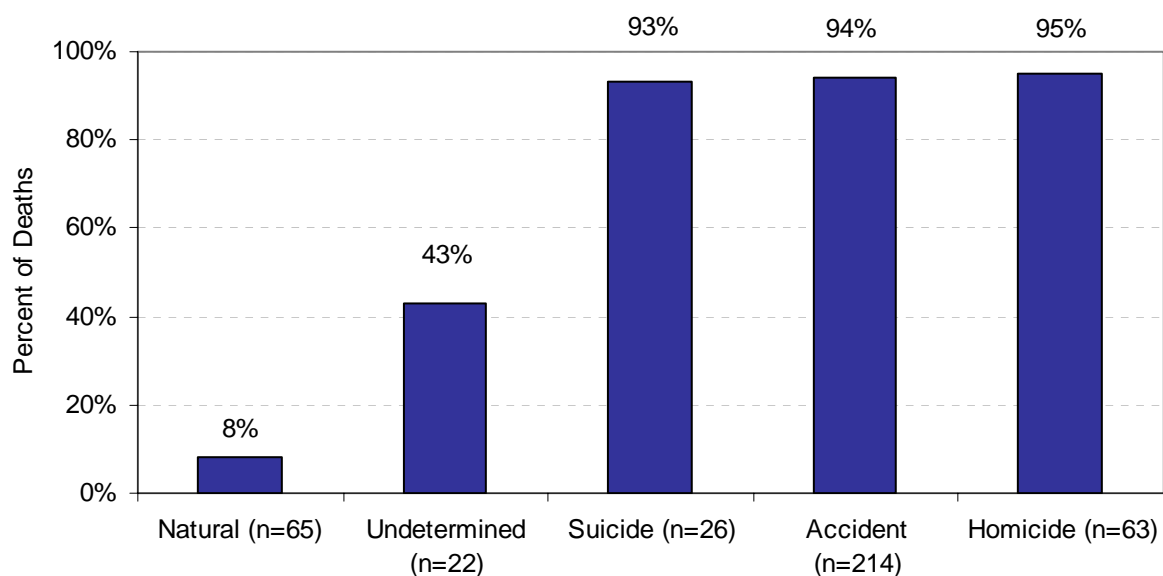
**Figure 7. Deaths Among Children by Preventability, Arizona 2007 (n=1,143)**



Ninety-five percent of homicides were preventable (n=63). For five percent of homicides, local teams did not have enough information to determine preventability. Ninety-four percent of accidental deaths were preventable (n=214) and 93 percent of suicides were preventable (n=26). For seven percent of suicides, local teams did not have enough information to determine preventability. Only eight percent of natural deaths were determined to have been preventable (n=65). Figure 8 shows preventable deaths by manner.

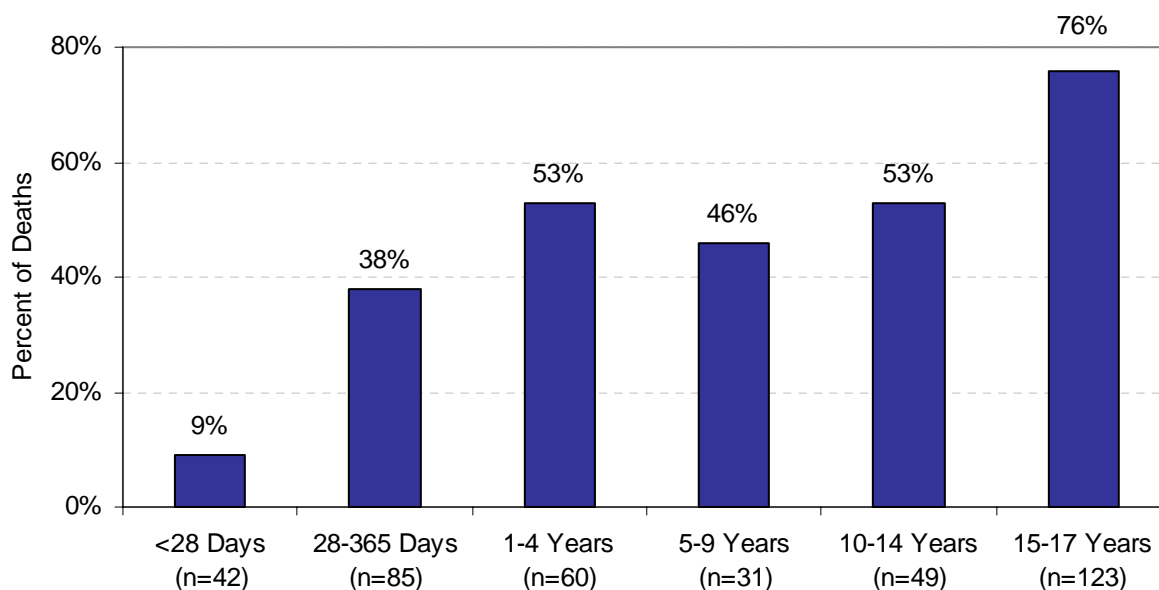


**Figure 8. Preventable Deaths Among Children by Manner, Arizona 2007 (n=390)**



Preventability also varied by age group. Children younger than one year of age had the lowest percentage of preventable deaths. The highest percentage of preventable deaths was among children ages 15 through 17 years (76 percent, n=123). Figure 9 shows preventable deaths among children by age group.

**Figure 9. Preventable Deaths Among Children by Age Group, Arizona 2007 (n=390)**



During the review of each child's death, teams identify factors believed to have contributed to the death. Although the presence of a contributing factor typically led to the determination that a death was preventable, this was not always the case. For example, the team might have concluded that an unsafe sleep environment (e.g. infant left sleeping on a couch) was a contributing factor in an unexpected infant death. However, the team may not have had sufficient information (e.g. autopsy report, adequate scene investigation) to determine that the death could have been prevented.

## PREMATURITY

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Local teams consider a child's death due to prematurity if the infant was less than 38 weeks gestation and had no other underlying cause of death. (Infants with congenital anomalies not compatible with life are not included in the prematurity category.) In 2007, there were 321 deaths due to prematurity, which accounted for 28 percent of all child deaths. In 2006, 25 percent of all child deaths were due to prematurity (n=294). The rate of deaths due to prematurity in 2007 was 3.1 deaths per 1,000 live births. This was an increase from 2006 when the rate was 2.9 deaths per 1,000 live births. In 2005, the rate of deaths due to prematurity was 3.0 deaths per 1,000 live births.

In 2007, 55 percent of the premature infants who died were males (n=176) and 45 percent were female (n=145). Half of the premature infants who died were Hispanic (51 percent, n=164), 33 percent were White, Non-Hispanic (n=106), eight percent were African American (n=26), five percent were American Indian (n=15), and three percent were Asian (n=10).

The majority of prematurity-related deaths were among infants who were 20 through 25 weeks gestational age (67 percent, n=213), followed by infants who were 26 through 37 weeks gestational age (17 percent, n=54). There were 78 deaths due to prematurity among infants in multiple births (70 were twins, four were triplets, and four were quadruplets).

For 11 percent of deaths due to prematurity, prenatal care information was unknown to review teams (n=37). For nine percent of the deaths, the mother reported that she did not receive any prenatal care (n=30). Seventy-two percent of mothers started prenatal care within the first trimester (n=231). For almost half of the prematurity deaths, the mother was 20 through 29 years of age at the time of the birth (47 percent, n=153). Fourteen percent of the mothers were 19 years of age and younger (n=44), and 26 percent of mothers were 30 years of age and older (n=83).

Forty-two percent of mothers whose infants died of prematurity were insured by the Arizona Health Care Cost Containment System (AHCCCS) (n=135). Thirteen percent of mothers had less than a high school education (n=41), 42 percent completed high

school (n=136), and 26 percent completed at least some college (n=85). For 18 percent of mothers, educational status was unknown (n=59).

For 65 percent of deaths due to prematurity, the mothers experienced pregnancy- or birth-related complications which may have contributed to the death (n=208), including 95 mothers who experienced preterm labor. Two percent of mothers were known to have had diabetes (n=8). Five percent of mothers reported using illegal drugs during the pregnancy (n=17) and one percent reported heavy alcohol use (n=3). Six percent of mothers reported smoking during the pregnancy (n=18). Two percent of mothers reported that they experienced intimate partner violence during the pregnancy (n=5). Table 5 shows contributing factors for prematurity deaths.

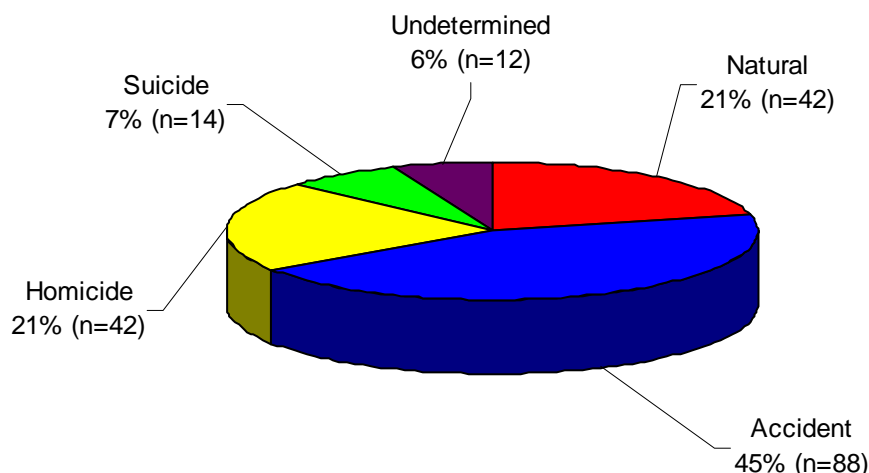
Table 5. Contributing Factors for Prematurity Deaths, Arizona 2007		
Factor*	Number	Percent
Mother had pregnancy or birth complications	208	65%
Multiple birth	78	24%
Drugs/alcohol/smoking during pregnancy	38	12%
Mother had chronic illness (e.g. diabetes)	8	2%
*More than one factor may have been identified for each death		

## SUBSTANCE USE

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Substance use (including illegal drugs, prescription drugs, and/or alcohol) was involved in 198 child deaths in Arizona during 2007, which accounted for 17 percent of all child deaths. This was an increase from 2006, when substance use was involved in 12 percent of all child deaths (n=140). In 2007, substance use contributed to 45 percent of accidents (n=88), 21 percent of natural deaths (n=42), 21 percent of homicides (n=42), seven percent of suicides (n=14), and six percent of deaths of undetermined manner (n=12). Figure 10 shows child deaths involving drugs and/or alcohol by manner.

**Figure 10. Deaths Among Children Involving Drugs and/or Alcohol by Manner, Arizona 2007 (n=198)**



Motor vehicle crashes accounted for 25 percent of child deaths involving drugs and/or alcohol (n=50), and firearms accounted for 14 percent (n=28). Twenty-six deaths involving drugs and/or alcohol were due to prematurity (typically substance exposed preterm newborns). Table 6 shows child deaths involving drugs and/or alcohol by cause and manner in 2007.

Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Motor vehicle crash	47	1	1		1	50
Firearm injury	2	19	7			28
Prematurity				26		26
Poisoning	18	2	2			22
Medical*				16		16
Undetermined					13	13
Blunt force trauma		11				11
Suffocation	10	1				11
Stabbing	6	1				7
Other		7				7
Hanging			4			4
Drowning	3					3
<b>Total</b>	<b>86</b>	<b>42</b>	<b>14</b>	<b>42</b>	<b>14</b>	<b>198</b>

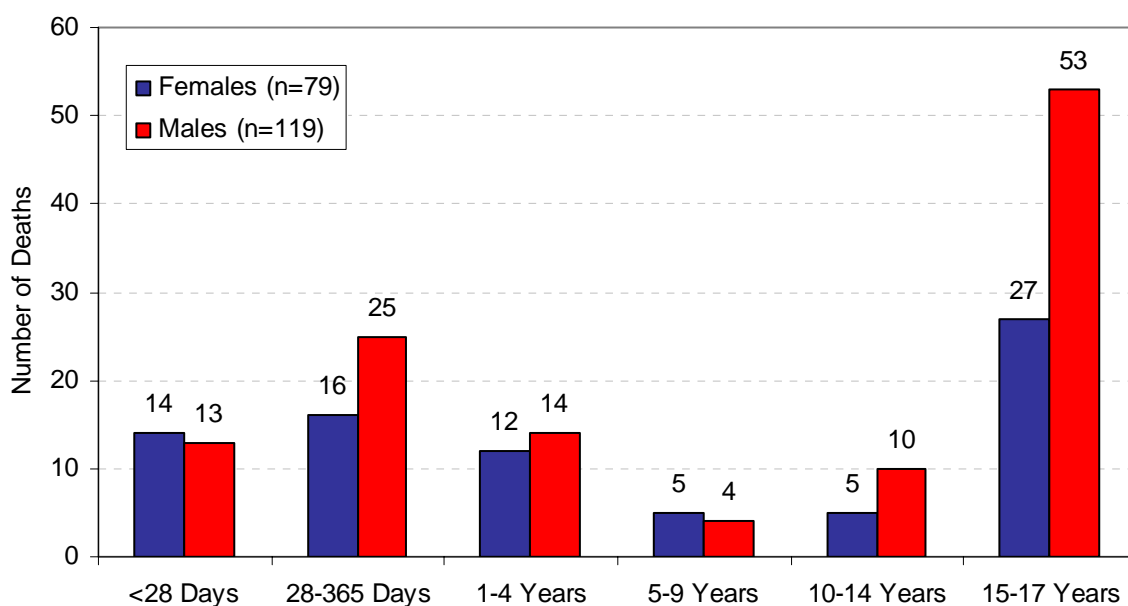
\*Excluding SIDS and prematurity

Alcohol was involved in 80 child deaths in 2007 and 64 deaths in 2006; marijuana was involved in 76 deaths in 2007 and 43 deaths in 2006; methamphetamines were involved in 48 deaths in 2007 and 43 deaths in 2006; cocaine was involved in 31 deaths in 2007 and 20 deaths in 2006; and opiates were involved in 16 deaths in 2007 and nine deaths in 2006. Each one of these substances increased in 2007. Table 7 shows substances that contributed to child deaths for 2006 and 2007.

Table 7. Substances that Contributed to Deaths Among Children, Arizona 2006-2007				
Substance*	2006		2007	
	Number	Percent	Number	Percent
Alcohol	64	5%	80	7%
Marijuana	43	4%	76	7%
Methamphetamine	43	4%	48	4%
Cocaine	20	2%	31	3%
Opiates	9	1%	16	1%
*More than one substance could have been involved in a single death				

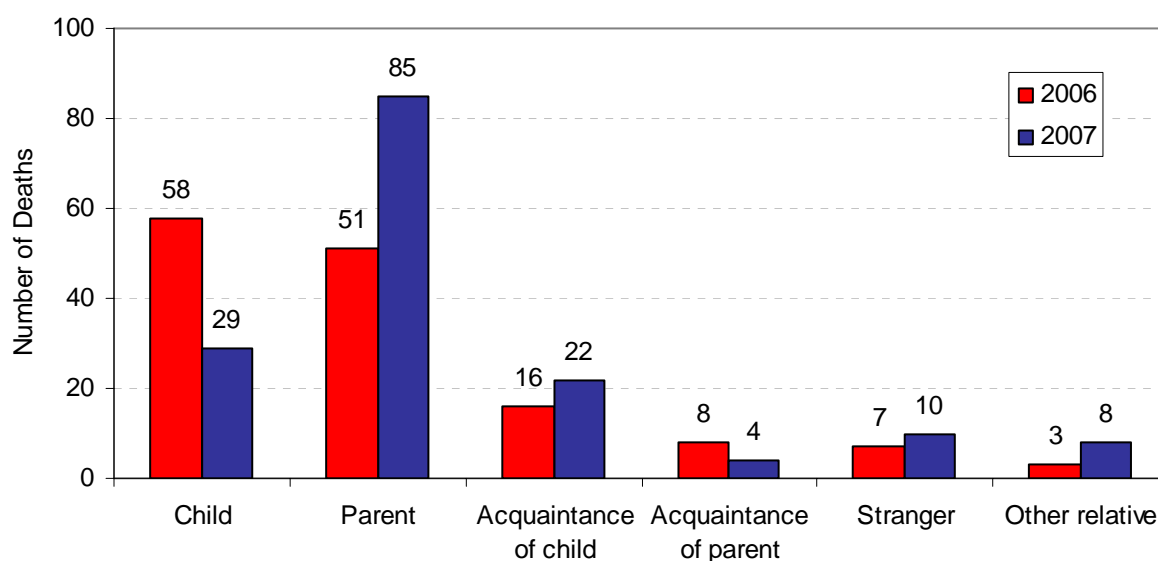
Drugs and/or alcohol were determined to have been a contributing factor for child deaths among males and females in all age groups. Males of all age groups accounted for 60 percent of all substance use-related deaths (n=119). Figure 11 shows child deaths involving substance use by sex and age group.

**Figure 11. Child Deaths Involving Substance Use by Sex and Age Group, Arizona 2007 (n=198)**



The individual who used the substance may have been the parent, child, an acquaintance of the child or family, a relative, or a stranger. For example, if the child was a passenger in a car hit by an intoxicated driver of another car, then the individual who used the substance was classified as “stranger.” In some deaths, more than one individual may have been using drugs and/or alcohol. Figure 12 shows child deaths involving drugs and/or alcohol by substance user for 2006 and 2007.

**Figure 12. Child Deaths Involving Drugs and/or Alcohol by Substance User, Arizona 2007**



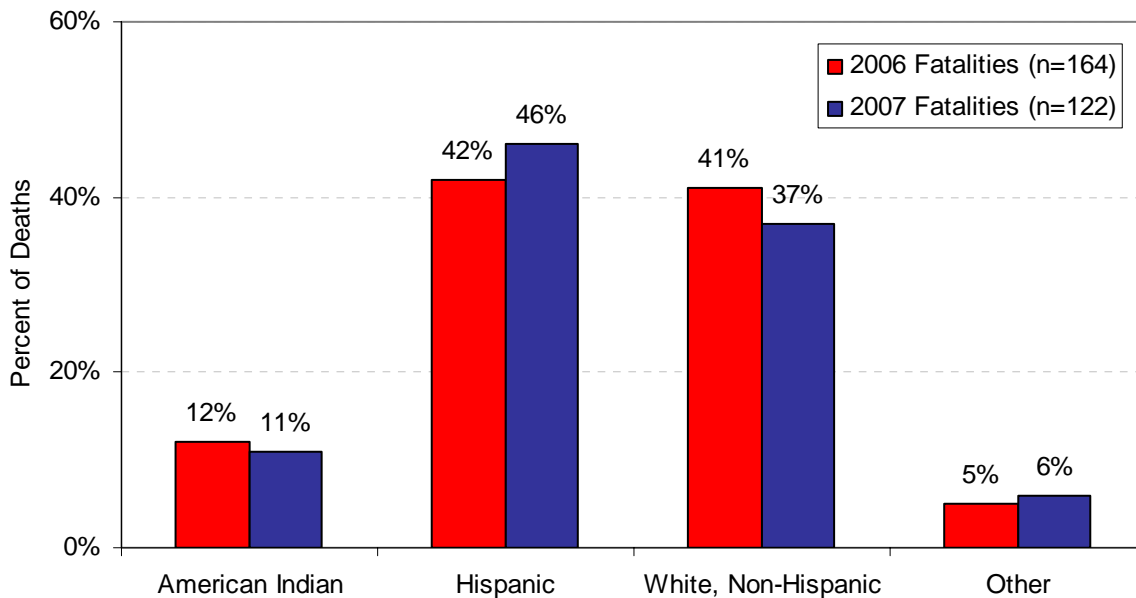
## MOTOR VEHICLE CRASH FATALITIES

In 2007, 122 children died as the result of motor vehicle crashes in Arizona (11 percent of child fatalities) compared to 164 motor vehicle-related fatalities among children in 2006 (14 percent of child fatalities). In 2007, 120 motor vehicle crashes were accidents, one crash fatality was a suicide and one crash fatality was a homicide. The rate of motor vehicle fatalities in 2007 was 7.2 deaths per 100,000 children. This was a decline from 2006 when the motor vehicle fatality rate was 9.9 deaths per 100,000 children. In 2005, the rate was 8.4 deaths per 100,000 children.

The majority of motor vehicle-related deaths in 2007 were among males (52 percent, n=63) and 48 percent were among females (n=59). Forty-six percent of deaths were among Hispanic children (n=56), 37 percent were among Non-Hispanic Whites (n=45), 11 percent were among American Indians (n=14), and six percent were among other races/ethnicities (n=7).

The percentage of motor vehicle-related deaths among Hispanic children increased in 2007 compared to 2006. The percentage of motor vehicle-related deaths among American Indian and Non-Hispanic White children decreased. Figure 13 shows motor vehicle-related deaths by race/ethnicity for 2006 and 2007.

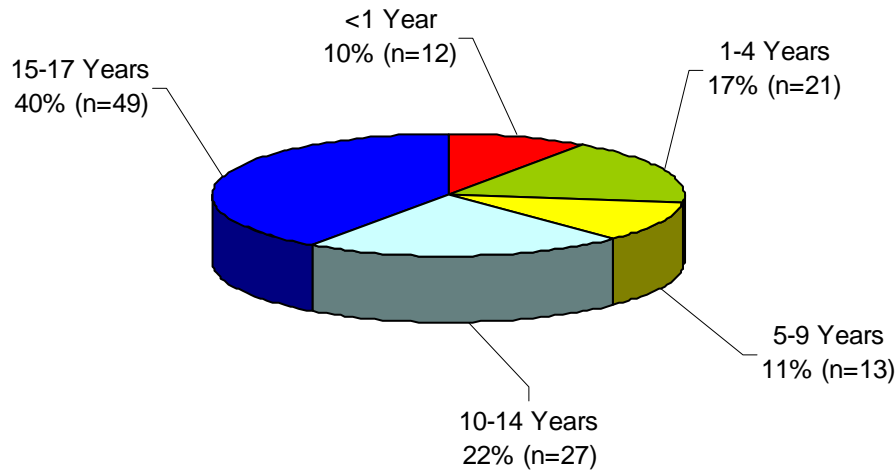
**Figure 13. Motor Vehicle-Related Deaths Among Children by Race/Ethnicity, Arizona 2006-2007**



The number of infants who died in motor vehicle crashes increased from three in 2006 to 12 in 2007. Four infants died as a result of *in utero* trauma during motor vehicle crashes in 2007. Children 15 through 17 years of age accounted for 40 percent of child motor vehicle crash deaths (n=49). Figure 14 shows motor vehicle-related fatalities among children by age group.



**Figure 14. Motor Vehicle-Related Deaths Among Children by Age Group, Arizona 2007 (n=122)**

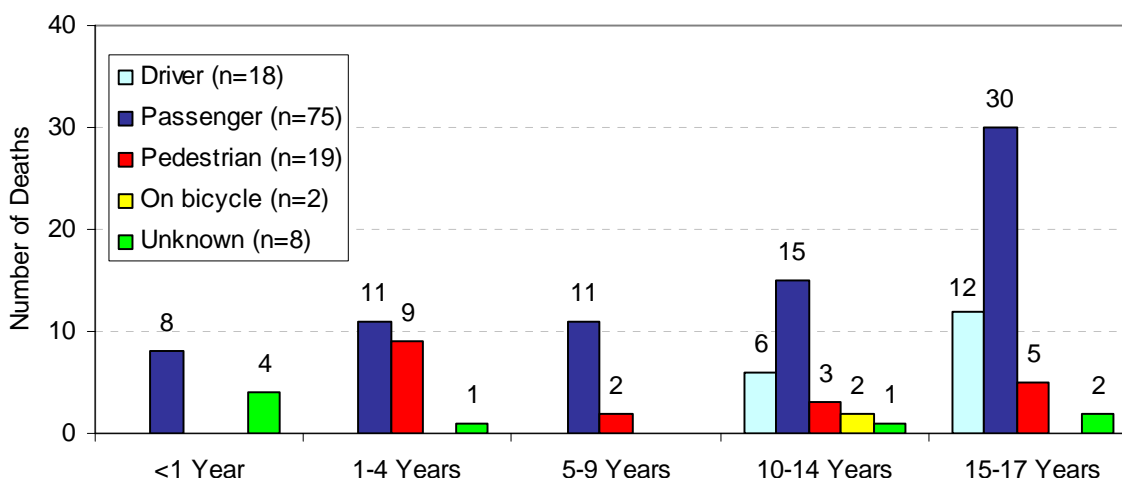


Five children were killed due to vehicle backovers. Three of these children were struck by sport utility vehicles and two were struck by trucks. All of these children were five years of age and younger.

Nine children died in all terrain vehicle (ATV) crashes. Two children were five through nine years of age, five children were 10 through 14 years of age, and two were 15 through 17 years of age. Seven of the children who died in all terrain vehicle crashes were drivers and two were passengers. Seven of the all terrain vehicle crashes occurred among residents of rural counties. Six children who died in all terrain vehicle crashes were not wearing helmets.

There were 75 children who died as passengers of motor vehicles (61 percent), 18 children were drivers (15 percent), 19 children were pedestrians (16 percent), and two children were on bicycles (two percent). For eight children who died in motor vehicle crashes, their exact locations were unknown (seven percent). Figure 15 shows motor vehicle-related fatalities among children by age group and location of the child.

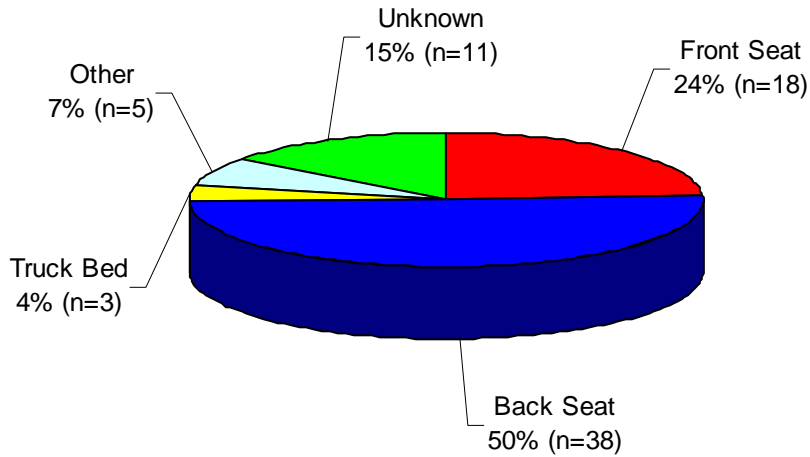
**Figure 15. Motor Vehicle-Related Deaths Among Children by Age Group and Location, Arizona 2007 (n=122)**



Of the 11 passengers who were one through four years of age, seven were not properly restrained in the vehicles (64 percent). Of the 11 passengers who were five through nine years of age, eight were not properly restrained in the vehicles (73 percent). Of the 21 drivers and passengers who were 10 through 14 years of age, eight were not properly restrained (38 percent). Of the 42 drivers and passengers who were 15 through 17 years of age, 26 were not properly restrained (62 percent).

Among the total 75 passengers, 51 percent were located in the back seat (n=38), 24 percent were in the front seat (n=18), four percent were riding in truck beds (n=3), and 22 percent were in other or unknown locations (n=16). Figure 16 shows motor vehicle-related fatalities by child's location in the vehicle.

**Figure 16. Child Passengers in Fatal Motor Vehicle Crashes by Location in the Vehicle, Arizona 2007 (n=75)**



There were 26 child deaths caused by motor vehicle rollovers in 2007. For two of the rollovers, the child who died was the driver of the vehicle. Seven rollovers occurred on rural roads (27 percent), and 12 rollovers occurred on highways (46 percent). Twenty-seven percent of rollovers occurred in sport utility vehicles (n=7), and 23 percent occurred in trucks (n=6). Table 8 shows vehicle types involved in fatal rollovers during 2007.

Table 8. Fatal Rollovers by Vehicle Type, Arizona 2007 (n=26)		
Vehicle type	Number	Percent
Other/unknown	9	35%
Sport utility vehicle	7	27%
Truck	6	23%
Car	3	11%
Van	1	4%
<b>Total</b>	<b>26</b>	

As in previous years, motor vehicle crashes were the leading cause of preventable deaths. Ninety-four percent of motor vehicle crash fatalities were determined to have been preventable (n=115). For 53 deaths, excessive speed was a contributing factor (43 percent). Lack of vehicle restraints was identified as a preventable factor for 41 percent of motor vehicle crash fatalities among children (n=50). Twenty-six children died in crashes involving a substance-impaired driver, and 23 of those drivers were impaired by alcohol. In three of the 23 alcohol-related crashes, the impaired driver was the child who died. Ten children were not wearing helmets, including six who were on all terrain vehicles and two who were struck by vehicles while riding bikes. One child was not wearing a helmet while riding a motorcycle, and one child was struck while

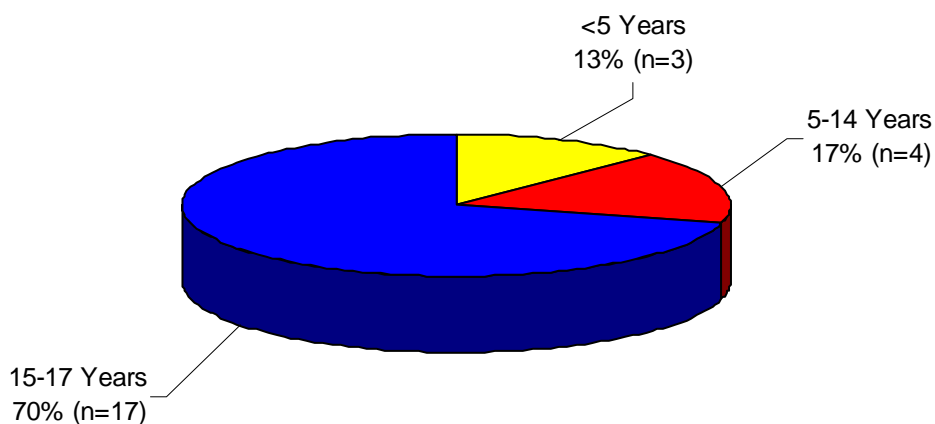
riding a skateboard. Table 9 shows preventable factors for motor vehicle crash fatalities among children in Arizona during 2007.

Table 9. Preventable Factors for Motor Vehicle-Related Deaths Among Children, Arizona 2007		
Factor*	Number	Percent
Excessive driving speed	53	43%
Lack of vehicle restraint	50	41%
Drugs and/or alcohol	26	21%
Reckless driving	24	20%
Driver inexperience	20	16%
Driver distraction	14	11%
Lack of supervision	10	8%
Lack of helmet	10	8%
*More than one factor may have been identified for each death		

## POISONINGS

There were 24 deaths due to poisonings in 2007, compared to 11 in 2006. In 2007, poisonings accounted for two percent of all child deaths and occurred equally among boys and girls (50 percent, n=12 each). Sixty-two percent of poisonings were among Non-Hispanic White children (n=15), 25 percent were among Hispanic children (n=6), and 12 percent were among other races/ethnicities (n=3). Children ages 15 through 17 years accounted for the majority of poisoning deaths in 2007 (70 percent, n=17). Figure 17 shows poisoning deaths among children by age group.

**Figure 17. Poisoning Deaths Among Children by Age Group, Arizona 2007 (n=24)**



Eighty-three percent of poisonings were accidental (n=20). Twenty-nine percent were listed as unintentional overdoses (n=7) and 50 percent were acute intoxications (n=12). One death occurred after accidental inhalation of carbon monoxide while swimming behind a boat.

Half of the substances used in poisoning deaths were prescription medications (n=12), with opiate painkillers identified most frequently (n=9). This was an increase from 2006, when only three poisoning deaths were due to opiates. In 2007, illegal drugs were involved in six deaths and alcohol was a factor in six deaths. Table 10 shows poisoning deaths by substance. More than one substance may have been a factor in a single death.

Table 10. Poisoning Deaths Among Children by Substance, Arizona 2007		
Substance*	Number	Percent
Opiate painkillers	9	37%
Other prescription drugs	9	37%
Illegal drugs	6	25%
Alcohol	6	25%
Other	4	17%
Over the counter drugs	2	8%
*More than one substance may have been a factor in a single death		

One hundred percent of poisoning deaths were determined to have been preventable. Sixty-two percent of children were known to have a history of substance abuse (n=15). Table 11 shows preventable factors for poisoning deaths.

Table 11. Preventable Factors for Poisoning Deaths Among Children, Arizona 2007		
Factor*	Number	Percent
History of substance abuse	15	62%
Substance not properly stored	7	29%
Lack of supervision	6	25%
Child had history of mental illness (including depression)	4	17%
*More than one factor may have been identified for each death		

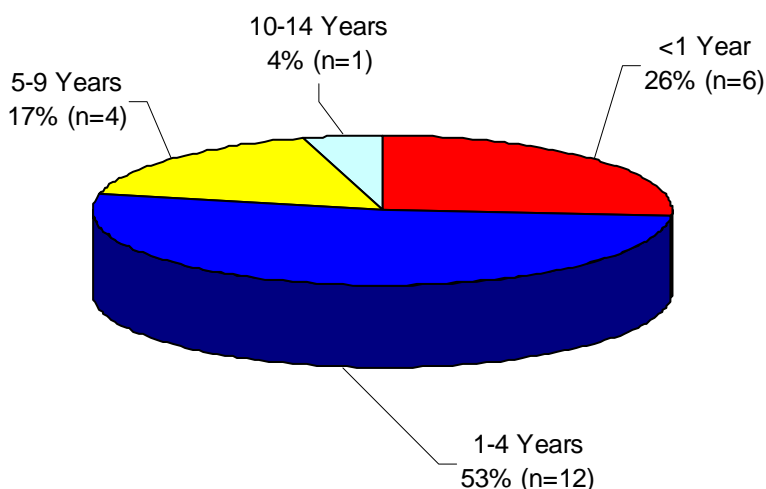
## DROWNINGS

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In 2007, there were 23 deaths among children due to drownings, which accounted for two percent of all child deaths. In 2006, there were 31 drowning fatalities among children (three percent of child deaths). The rate of drowning fatalities in 2007 was 1.4 deaths per 100,000 children. This was a decline from 2006 when the drowning rate was 1.9 deaths per 100,000 children. In 2005, the rate was 2.2 deaths per 100,000 children.

Sixty-one percent of drownings in 2007 were among males (n=14) and 39 percent were among females (n=9). Fifty-two percent of drowning deaths were among White, Non-Hispanic children (n=12), 39 percent were among Hispanics (n=9), and nine percent were among American Indian children (n=2). Slightly more than half of child drowning fatalities were among children ages one through four years (53 percent, n=12). Figure 18 shows drowning fatalities among children by age group.

**Figure 18. Drowning Deaths Among Children by Age Group, Arizona 2007 (n=23)**

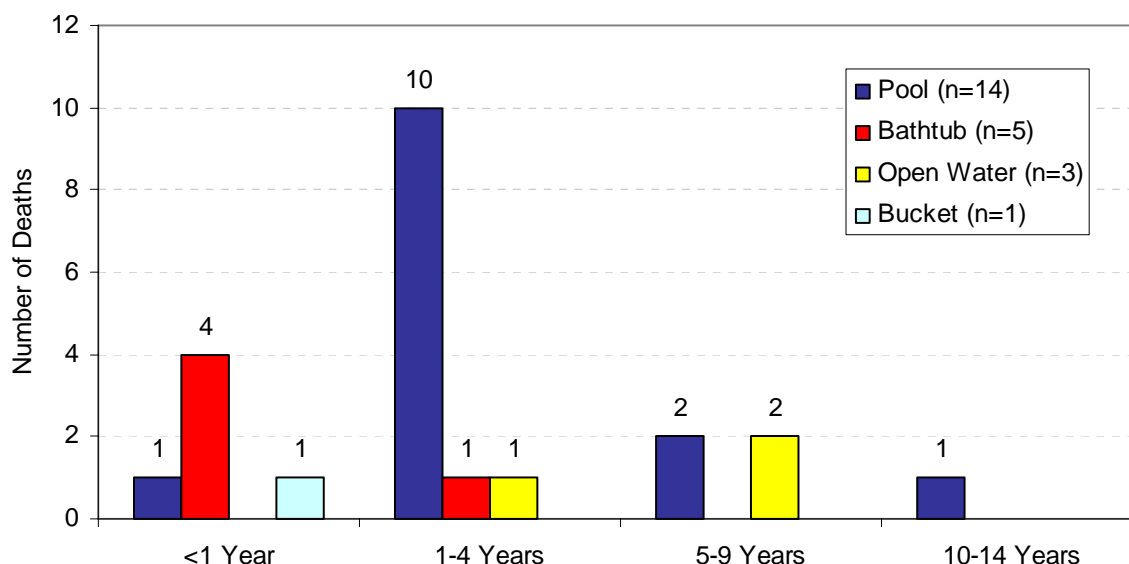


Fourteen drowning fatalities occurred in pools, three occurred in open water, five occurred in bathtubs, and one occurred in a bucket. In 2007, there were no child drowning deaths in Arizona's lakes or rivers, although one child died due to carbon monoxide poisoning while swimming in open water. (Because the drowning occurred after the fatal carbon monoxide exposure, this death was included in the Poisonings discussion above.) Table 12 shows the locations of drowning fatalities in Arizona during 2007.

Table 12. Location of Child Drowning Fatalities, Arizona 2007 (n=23)		
Location	Number	Percent
Pool	14	61%
▪ Above-ground	1	
▪ In-ground	13	
Bathtub	5	22%
Open water	3	13%
▪ Pond	1	
▪ Canal	2	
Bucket	1	4%
<b>Total</b>	<b>23</b>	

The highest number of pool drownings were among children ages one through four years (n=10). The majority of bathtub drownings occurred among children younger than one year (n=4). In 2007, there were no drowning deaths among children 15 through 17 years of age. Figure 19 shows the location of drowning fatalities by age group.

**Figure 19. Drowning Deaths Among Children by Age Group and Location, Arizona 2007 (n=23)**



Ninety-six percent of child drownings were identified as preventable (n=22). Lack of supervision was the most commonly identified preventable factor in child drowning fatalities (83 percent, n=19), followed by access to water (65 percent, n=15). Table 13 shows preventable factors for child drownings in Arizona during 2007.

Table 13. Preventable Factors for Child Drownings, Arizona 2007		
Factor*	Number	Percent
Lack of supervision	19	83%
Access to water	15	65%
Drugs and/or alcohol	6	26%
*More than one factor may have been identified for each death		



## SUICIDES

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In 2007, there were 28 suicides among children in Arizona, which accounted for two percent of all child deaths. In 2006, suicide accounted for four percent of all child deaths (n=48). The child suicide rate in 2007 was 1.7 deaths per 100,000 children. This was a decline from 2006 when the suicide rate was 2.9 deaths per 100,000 children. In 2005, the suicide rate was 2.2 deaths per 100,000 children.

Sixty-eight percent of the suicides in 2007 were among males (n=19) and 32 percent were among females (n=9). Fifty-four percent of suicides were among Hispanic children (n=15), 29 percent were among Non-Hispanic Whites (n=8), 14 percent were among American Indians (n=4), and three percent were among children of other races/ethnicities (n=1).

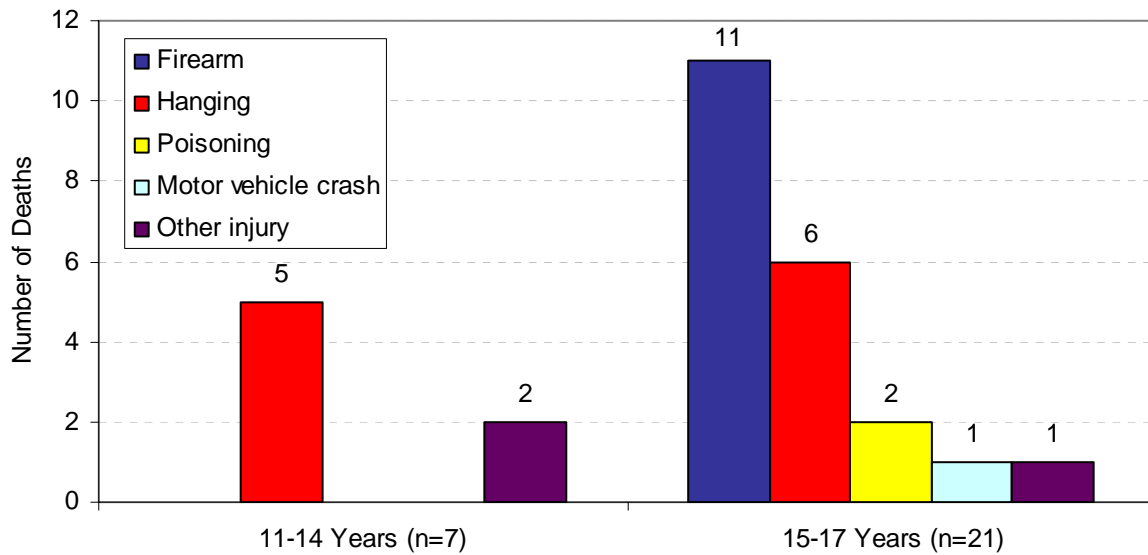
The majority of suicides were among children ages 15 through 17 years (75 percent, n=21), but 25 percent were among children 14 years of age and younger (n=7). The youngest child who committed suicide in 2007 was 11 years old.

Identification of children at risk for suicide can be difficult, and warning signs are not always recognized or taken seriously. Eight children who took their own lives in 2007 were known to have talked about suicide to others (29 percent), six children were known to have made prior suicide threats (21 percent), and two children had made prior suicide attempts (seven percent).

Only three children were known to have been on medication for mental illness at the time of their deaths (ten percent). Five children who committed suicide were known to have had prior mental health services (18 percent), but only two children were known to have been receiving mental health services at the time of their deaths (seven percent).

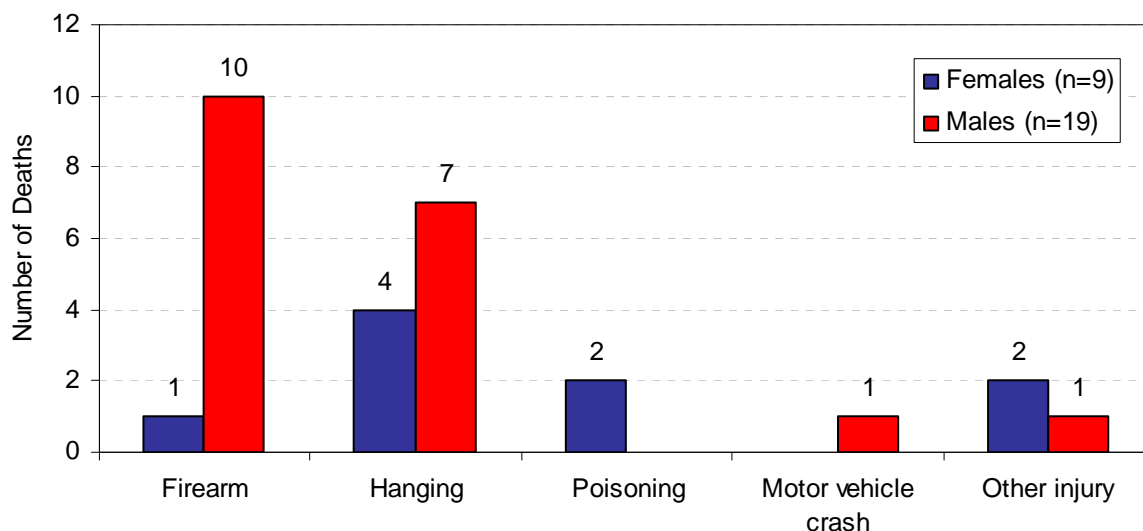
Firearm injuries accounted for 39 percent of child suicides in Arizona during 2007 (n=11), and hangings accounted for an additional 39 percent (n=11). The objects used in hanging suicides were ropes, electrical cords, belts, and neckties. Cause of death among suicides varied by the age of the child. All of the poisonings and firearm-related suicides were among children ages 15 through 17 years. Children 14 years of age and younger accounted for 18 percent of the intentional hangings during 2007 (n=5). Figure 20 shows suicides among children by cause of death and age group.

**Figure 20. Suicides Among Children by Cause of Death and Age Group, Arizona 2007 (n=28)**



Cause of death among suicides also varied by sex. Males were more likely to have used firearms or hanging as a means of suicide. Males accounted for 91 percent of the firearm-related suicides (n=10) and 64 percent of the intentional hangings (n=7). Females accounted for both of the intentional poisoning cases and 36 percent of the hangings (n=4). Figure 21 shows suicides among children by cause of death and sex.

**Figure 21. Suicides Among Children by Cause of Death and Sex, Arizona 2007 (n=28)**



Ninety-three percent of child suicides were determined to have been preventable (n=26). Drugs and/or alcohol were the most commonly identified preventable factor (50 percent, n=14), followed by access to firearms (39 percent, n=11). Table 14 shows preventable factors for child suicides.

Table 14. Preventable Factors for Child Suicides, Arizona 2007		
Factor*	Number	Percent
Drugs and/or alcohol	14	50%
Access to firearms	11	39%
Lack of mental health treatment	9	32%
*More than one factor may have been identified for each death		

## HOMICIDES

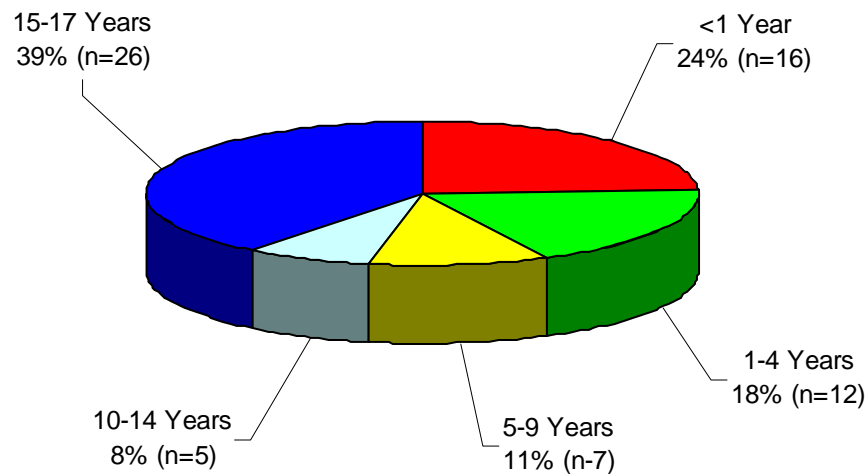
Sixty-six children were victims of homicide in Arizona during 2007, compared to 63 in 2006. Homicide accounted for six percent of all child deaths in Arizona during 2007. The child homicide rate in 2007 was 3.9 deaths per 100,000 children. This was an increase from 2006 when the homicide rate was 3.8 deaths per 100,000 children. In 2005, the homicide rate was 3.6 deaths per 100,000 children.

Seventy-one percent of homicide victims in 2007 were males (n=47) and 29 percent were females (n=19). Almost half of child homicides were among Hispanics (48 percent, n=32), 29 percent were among White Non-Hispanics (n=19), 18 percent were

among African Americans (n=12), and four percent were among other races/ethnicities (n=3).

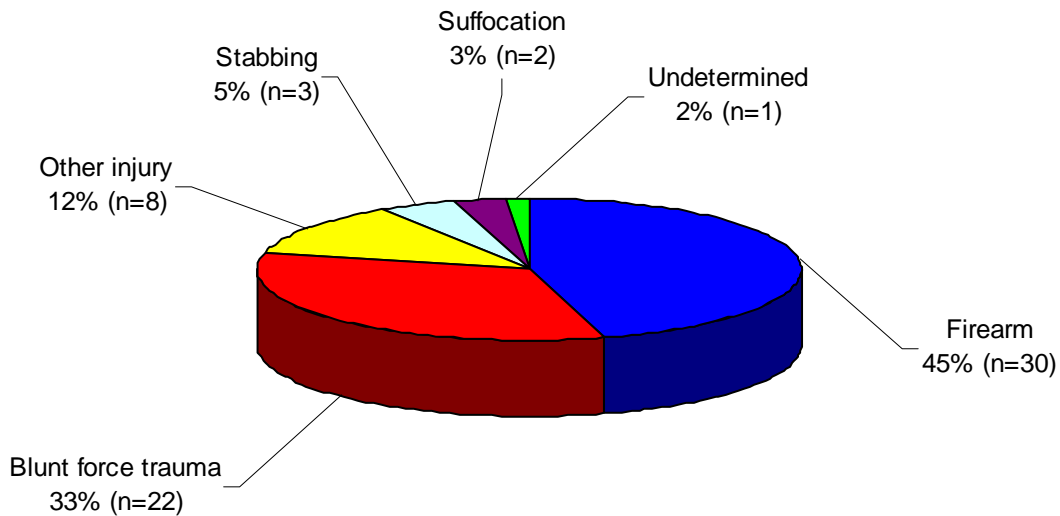
Children ages 15 through 17 years accounted for 39 percent of homicides (n=26). Twenty-four percent of homicides were among children younger than one year of age (n=16). Figure 22 shows homicides among children by age group.

**Figure 22. Homicides Among Children by Age Group, Arizona 2007 (n=66)**



Firearms were the leading cause of death among child homicides (45 percent, n=30), followed by blunt force trauma (33 percent, n=22). Three children were stabbed (five percent), two children were suffocated (three percent), and two children were intentionally poisoned (three percent). Figure 23 shows homicides among children by cause of death.

**Figure 23. Homicides Among Children by Cause of Death, Arizona 2007 (n=66)**



Half of the child homicides in 2007 were committed by the child's caregiver or supervisor, which included biological parents. Seventeen percent were committed by friends or acquaintances of the child, and 11 percent were perpetrated by strangers. Table 15 shows homicides among children by perpetrator.

Table 15. Homicides Among Children by Perpetrator, Arizona 2007 (n=66)		
Perpetrator	Number	Percent
Caregiver/supervisor	33	50%
Other/unknown	13	20%
Child's friend/acquaintance	11	17%
Stranger	7	11%
Sibling	2	3%
<b>Total</b>	<b>66</b>	

Ninety-two percent of child homicides were determined to have been preventable (n=61). For the remaining homicides, not enough information was available to local review teams to determine preventability. Drugs and/or alcohol were the most commonly identified preventable factor in child homicides (64 percent, n=42), followed by access to firearms (49 percent, n=30). Gang conflict was a factor in ten homicides (16 percent). Table 16 shows preventable factors for child homicides in Arizona during 2007.

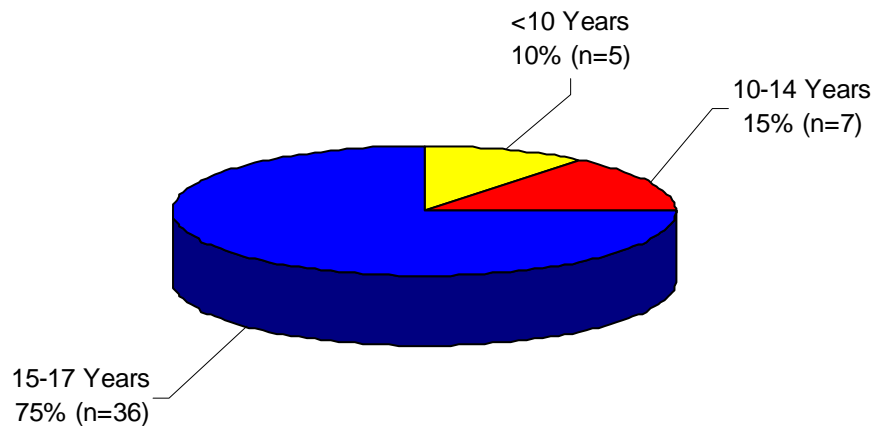
Table 16. Preventable Factors for Child Homicides, Arizona 2007		
Factor*	Number	Percent
Drugs and/or alcohol	42	64%
Access to firearms	30	49%
Involvement in gang	10	16%
*More than one factor may have been identified for each death		

## FIREARM-RELATED FATALITIES

There were 48 firearm-related fatalities in 2007, compared to 60 in 2006. Firearms accounted for four percent of all child deaths in 2007 and five percent in 2006. Ninety percent of the firearm-related deaths in 2007 were among males (n=43) and ten percent were among females (n=5). Half of the firearm-related deaths were among Hispanics (n=24), 31 percent were among Non-Hispanic Whites (n=15), and 19 percent were among other races/ethnicities (n=9).

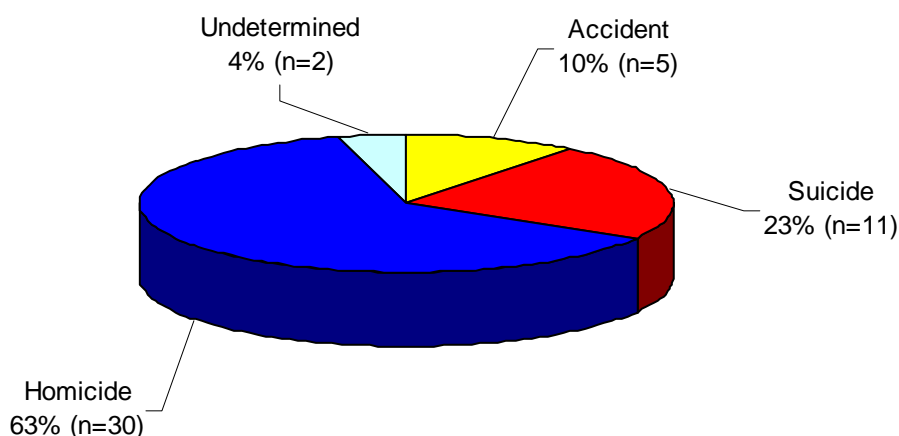
Two-thirds of these deaths were among children ages 15 through 17 years (n=36). There were 12 deaths due to firearms among children 14 years of age and younger. Figure 24 shows firearm-related fatalities among children by age group.

**Figure 24. Firearm-Related Deaths Among Children by Age Group, Arizona 2007 (n=48)**



Sixty-three percent of firearm-related deaths were homicides (n=30), 23 percent were suicides (n=11), ten percent were accidents (n=5), and four percent were of undetermined manner (n=2). Figure 25 shows firearm-related deaths among children by manner.

**Figure 25. Firearm-Related Deaths Among Children by Manner, Arizona 2007 (n=48)**

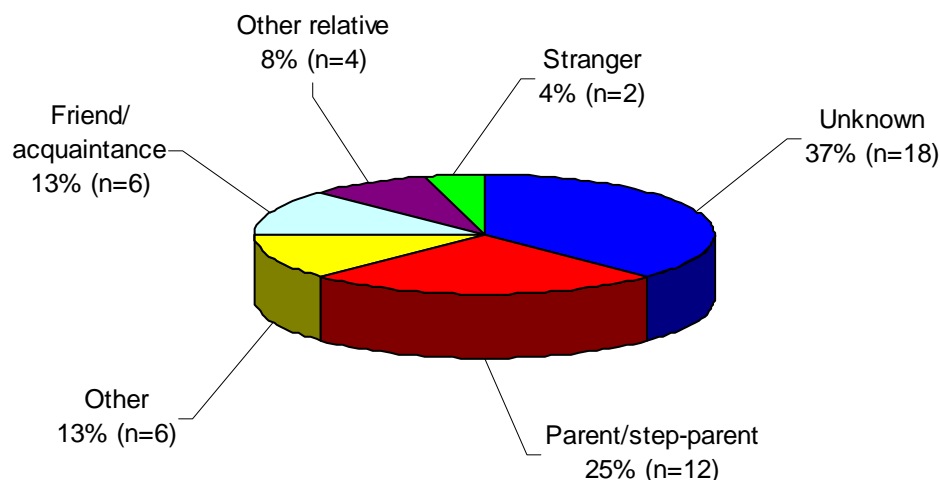


Handguns accounted for the majority of firearm-related fatalities among children in 2007 (83 percent, n=40), followed by shotguns (six percent, n=3). Table 17 shows types of firearms involved in child deaths during 2007.

Table 17. Types of Firearms Involved in Child Deaths, Arizona 2007 (n=48)		
Type	Number	Percent
Handgun	40	83%
Shotgun	3	6%
Assault rifle	2	4%
Unknown	2	4%
Hunting rifle	1	2%
<b>Total</b>	<b>48</b>	

Among the 48 firearm-related deaths, 13 firearms were stored with ammunition (27 percent), and nine firearms were stored loaded (19 percent). The largest percentage of firearms belonged to parents or step-parents (25 percent, n=12). Figure 26 shows the owners of the firearms used in child fatalities.

**Figure 26. Owners of Firearms Involved in Child Deaths, Arizona 2007 (n=48)**



For a large percentage of firearms, the storage location was unknown to the review teams (46 percent, n=22). Three firearms involved in child deaths were stored in locked cabinets or safes (six percent), but the rest of the firearms were kept in unsecured locations (48 percent, n=23). Table 18 summarizes the locations of the firearms involved in child deaths during 2007.

Table 18. Locations of Firearms Involved in Child Deaths, Arizona 2007 (n=48)		
Location	Number	Percent
Unknown	22	46%
Other not stored (unsecured location)	15	31%
In or under furniture (e.g. in a drawer or under a bed)	5	10%
Locked cabinet/safe	3	6%
Closet	3	6%
<b>Total</b>	<b>48</b>	

Access to firearms was identified as a preventable factor for 100 percent of firearm-related fatalities among children (n=48). Drugs and/or alcohol were involved in 58 percent of firearm-related deaths (n=28). Table 19 shows preventable factors for firearm-related fatalities in Arizona during 2007.



Table 19. Preventable Factors for Firearm-Related Deaths Among Children, Arizona 2007		
Factor*	Number	Percent
Access to firearm	48	100%
Drugs and/or alcohol	28	58%
Lack of supervision	25	52%
Involvement in gang	10	21%
*More than one factor may have been identified for each death		

## MALTREATMENT FATALITIES

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To gain greater understanding of the contribution of neglect and abuse to child mortality, the Arizona Child Fatality Review Teams answered several questions regarding maltreatment. In order for a death to be classified as a result of maltreatment, the following three conditions must be met:

1. "An act or failure to act by a parent, caregiver, or other person as defined under State law which results in physical abuse, neglect, medical neglect, sexual abuse, emotional abuse, or an act or failure to act which presents an imminent risk of serious harm to a child" applied to the circumstances surrounding the death (from the U.S. Department of Health and Human Services definition of maltreatment).
2. The relationship of the individual accused of committing the maltreatment to the child must be the child's parent, guardian, or caretaker.
3. A team member, who is a mandated reporter, would be obligated to report a similar incident to Child Protective Services.

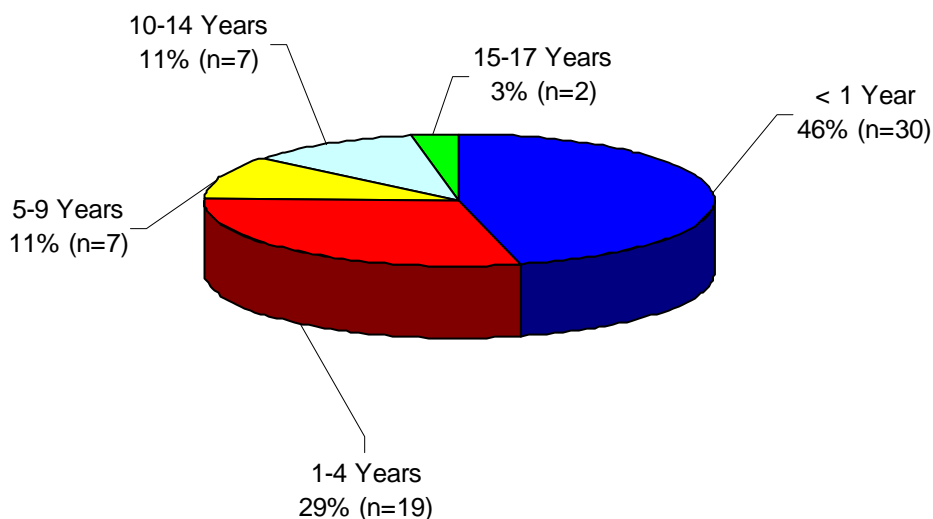
Deaths classified as maltreatment are also reported in other categories by manner and cause of death. For example, a death due to abusive head trauma would be classified as a manner of homicide, cause of shaken infant (person's body part used as a weapon), and a maltreatment death. An accidental or natural death might also be classified as a maltreatment death if, in the opinion of the team, a caretaker's negligence or actions contributed to or caused the death. For example, it would be maltreatment if a child died in a motor vehicle crash due to the parent driving while intoxicated with the child in the car.

The number of child maltreatment deaths presented in this report is not comparable to child maltreatment deaths reported by the Arizona Department of Economic Security (AzDES) for the National Child Abuse and Neglect Data System (NCANDS). NCANDS includes maltreatment deaths identified through Child Protective Services investigations, and because some maltreatment deaths identified by Local Child Fatality Review Teams may not have been reported to Child Protective Services or were within the jurisdiction of Tribal Nations, these deaths would not be included in AzDES's annual report to NCANDS. However, when a Local Child Fatality Review team identifies a

death due to maltreatment that has not been previously reported to Child Protective Services, the Local Child Fatality Review Program notifies Child Protective Services of the team's assessment so that an investigation can be initiated.

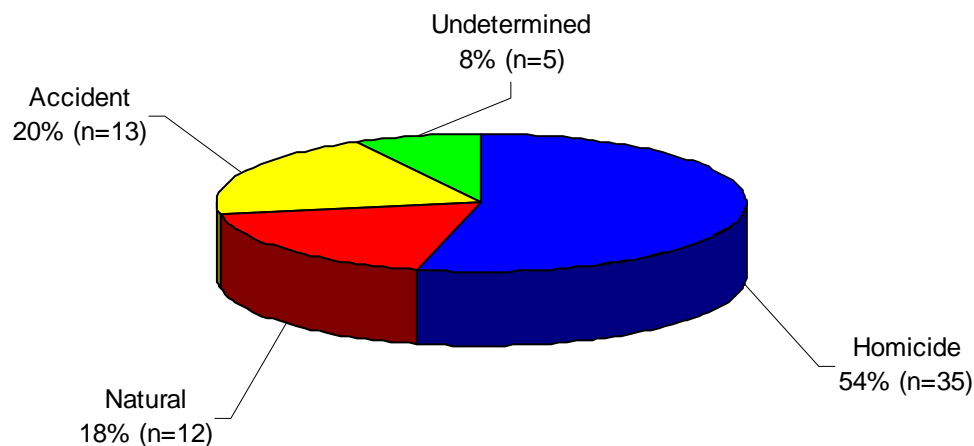
In 2007, there were 65 deaths classified as maltreatment, which was six percent of all child deaths during the year. This was an increase from 60 child maltreatment deaths in 2006 (five percent of all child deaths). In 2007, 65 percent of maltreatment deaths were among males (n=42) and 35 percent were among females (n=23). Forty-six percent of maltreatment deaths were among children younger than one year of age (n=30). Figure 27 shows maltreatment deaths among children by age group.

**Figure 27. Maltreatment Deaths Among Children by Age Group, Arizona 2007 (n=65)**



Homicide comprised more than half of the child maltreatment deaths in Arizona (54 percent, n=35). Twenty percent of maltreatment deaths were due to accidents (n=13). Maltreatment-related accidental deaths included unintentional injuries caused by significant negligence or substance abuse by a parent or guardian. Eighteen percent of child maltreatment deaths were due to natural manners (n=12). Examples of maltreatment deaths due to natural manners of death included prenatal substance exposure resulting in premature birth, neglect which resulted in an illness, or failure to obtain medical care. Eight percent of maltreatment deaths were of undetermined manner (n=5). Figure 28 shows maltreatment deaths among children by manner.

**Figure 28. Maltreatment Deaths Among Children by Manner, Arizona 2007 (n=65)**



As shown in Figure 27, the largest percentage of child maltreatment deaths was among infants (46 percent, n=30). Fifty percent of the maltreatment deaths among infants were due to homicides (n=15), 20 percent were due to accidents (n=6), thirteen percent were due to prematurity related to prenatal substance exposure (n=4), and seven percent deaths were due to other natural causes (n=2). Table 20 shows maltreatment deaths among infants by manner.

Table 20. Maltreatment Deaths Among Infants by Manner, Arizona 2007 (n=30)		
Manner	Number	Percentage
Homicide	15	50%
Accident	6	20%
Prematurity related to prenatal substance exposure	4	13%
Undetermined	3	10%
Other natural	2	7%

The leading causes of child maltreatment deaths were blunt force trauma (28 percent, n=18) and medical causes (21 percent, n=14). Table 21 shows maltreatment deaths among children by cause and manner.

Table 21. Maltreatment Deaths Among Children by Cause and Manner, Arizona 2007 (n=65)					
Cause	Accident	Homicide	Natural	Undetermined	Total
Blunt force trauma		18			18
Medical		2	12		14
Firearm injury	1	5			6
Undetermined		1		5	6
Other injury		6			6
Drowning	4	1			5
Poisoning	3	1			4
Exposure	3				3
Fall/crush	2				2
Suffocation/strangulation		1			1
<b>Total</b>	<b>13</b>	<b>35</b>	<b>12</b>	<b>5</b>	<b>65</b>

Children with disabilities are known to be at greater risk for maltreatment. Eighteen percent of the maltreated children in Arizona during 2007 were known to have had physical, mental, and/or sensory disabilities (n=12), including three children with autism.

The majority of maltreatment deaths occurred among children who were residing in parental homes (86 percent, n=56), and three deaths occurred in the homes of babysitters. One death occurred in a relative's home, one death occurred in a motel, one death occurred in a jail/detention center, and three deaths occurred in locations unknown to the review teams.

For 43 of the maltreatment deaths, the perpetrator was the child's biological parent (66 percent), and for an additional 12 deaths, the perpetrator was a step-parent or the mother's partner (19 percent). Table 22 shows child maltreatment deaths by perpetrator.

Table 22. Child Maltreatment Deaths by Perpetrator, Arizona 2007 (n=65)		
Perpetrator	Number	Percent
Biological parent	43	66%
Mother's partner	9	14%
Step-parent	3	5%
Other relative	3	5%
Babysitters*	3	5%
Undetermined perpetrator	3	5%
Father's partner	1	1%
<b>Total</b>	<b>65</b>	
<b>*May not have been under the jurisdiction of Arizona Child Protective Services</b>		

There were 11 fatalities among children two years of age and younger due to abusive head trauma (shaken baby syndrome) during 2007. This was an increase from 2006, when nine children two years of age and younger died as a result of abusive head

trauma. Nine of the children who were fatally shaken had retinal hemorrhages, and seven of the children who were shaken also exhibited injuries consistent with traumatic impact.

Known risk factors for abusive head trauma include substance abuse and parental inexperience in coping with the stresses of caring for an infant. Sixty-four percent of the deaths were caused by males (n=7). Biological parents were identified as responsible for three of the abusive head trauma deaths (27 percent), and four deaths were caused by mothers' boyfriends (36 percent). The person who caused the injuries was known to have been impaired by drugs and/or alcohol for two of the deaths (18 percent). For four of the deaths, crying was the event that triggered the physical abuse (36 percent).

Ninety-four percent of all child maltreatment deaths in 2007 were determined to have been preventable (n=61). Drugs and/or alcohol were identified to have contributed to 42 maltreatment deaths, and lack of supervision contributed to 27 deaths. Table 23 shows preventable factors for maltreatment deaths in 2007.

Table 23. Preventable Factors for Maltreatment Deaths Among Children, Arizona 2007		
Factor*	Number	Percent
Drugs and/or alcohol	42	65%
Lack of supervision	27	41%
Lack of mental health treatment	8	12%
Access to firearms	6	9%
Unsafe infant sleep environment	5	8%
*More than one factor may have been identified for each death		

### **Child Protective Services Involvement with Families of Children who Died due to Maltreatment**

Local Child Fatality Review Teams attempt to obtain records from child protective services agencies, including Arizona Child Protective Services and child protective agencies in other jurisdictions, such as tribal authorities and other states. If a child protective agency investigated a report of maltreatment for any child in the family prior to the incident leading to the child's death, then the family was considered to have had previous involvement with a child protective agency. This includes reports in which the maltreatment was or was not substantiated.

In 2007, 26 maltreated children were from families with prior child protective services involvement (40 percent), including one child with prior involvement with Tribal Nation child protective services. Among these 26 families, six were open cases with Arizona Child Protective Services at the time of the child's death. Four of these open cases had recent allegations that were in the process of being investigated, and two cases had been opened so that the families could receive services. There were no cases

identified as open with tribal authorities or with other states at the time of the child's death.

For 27 maltreatment deaths, mandatory reporters did not notify Arizona Child Protective Services that the deaths were suspected to have been due to maltreatment even after the investigations. Review of these deaths indicated that, in most of these situations, there were no other living children in the families. The number of maltreatment deaths that were not reported to Arizona Child Protective Services increased from 21 in 2006 to 27 in 2007.

For three child maltreatment deaths during 2007, the children were in the care of individuals other than a parent, guardian, or custodian (as defined in A.R.S. § 8-201) and may not have been under the investigative jurisdiction of Arizona Child Protective Services. These deaths were investigated by law enforcement (as defined in A.R.S. § 13-3620).

## **UNEXPECTED INFANT DEATHS**

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The Child Fatality Review Program categorizes an infant's death as unexpected when a previously healthy child dies suddenly. There were 143 unexpected infant (younger than one year of age) deaths in Arizona (12 percent of all deaths that year). In 2006, there were 90 unexpected infant deaths in Arizona, which accounted for eight percent of all child deaths. Sixty-five percent of unexpected infant deaths in 2007 were among males (n=93) and 35 percent were among females (n=50).

Non-Hispanic Whites accounted for 39 percent of deaths (n=56), Hispanic infants accounted for 37 percent (n=53), American Indians accounted for 15 percent (n=22), and eight percent were among other races/ethnicities (n=12). The majority of deaths were among infants younger than three months of age (62 percent, n=89), 39 deaths were among infants between three and six months of age (27 percent), and 15 infants who died unexpectedly were older than six months of age (ten percent).

Suffocation was the cause of 30 of these unexpected infant deaths and 37 deaths were identified as SIDS. Table 24 shows causes of unexpected infant deaths during 2007.

Table 24. Causes of Unexpected Infant Deaths, Arizona 2007 (n=143)		
Cause	Number	Percent
SIDS	37	26%
Suffocation	30	21%
Unknown	24	17%
Other medical condition	13	9%
Pneumonia	11	8%
Infection	10	7%
Cardiovascular	9	6%
Undetermined injury	5	3%
Other injury	4	3%
<b>Total</b>	<b>143</b>	

Ninety-nine unexpected infant deaths occurred in sleeping environments, and 89 of these environments were determined by local review teams to have been unsafe. Unsafe sleeping environments included unsafe sleep positions (on stomach or side), unsafe sleeping surfaces (adult beds, couches, chairs), and co-sleeping with other children or adults. In 2007, 30 children were placed to sleep on their stomachs or on their sides. Fifty-nine children were co-sleeping with other children or adults. Among 44 unexpected infant deaths, at least one parent was using drugs and/or alcohol at the time of the death.

### **Sudden Infant Death Syndrome (SIDS)**

SIDS is the diagnosis given to the sudden death of an infant younger than one year of age that remains unexplained after a complete postmortem investigation, including autopsy, death scene investigation, and review of the child's medical history. There were 37 deaths identified as SIDS in 2007, compared to 29 in 2006. Of the 37 SIDS deaths in 2007, 31 were known to have had autopsies. Sixty-eight percent of the SIDS deaths were among males (n=25) and 32 percent were among females (n=12).

Thirty-eight percent of the infants who died of SIDS were Hispanic (n=14), 32 percent were White, Non-Hispanic (n=12), 22 percent were American Indian (n=8), and eight percent were African American (n=3).

In Arizona during 2007, the greatest number of SIDS cases were among infants younger than three months of age (n=20). There were 15 SIDS cases among infants between three and six months of age and two SIDS cases among infants older than six months.

Six of the infants who died due to SIDS were born prematurely and 27 were full term. Local review teams lacked information regarding gestational age for four infants. Four of the infants were known to have had low birth weights (less than 2,500 grams) and 28 had normal birth weights (2,500 to 4,249 grams). One infant had a high birth weight (at least 4,250 grams).

Seven mothers of infants who died of SIDS reported that they smoked during the pregnancy, and 12 infants were exposed to secondhand smoke after birth.

Thirty-three of the SIDS cases occurred in sleeping environments. Sixteen of the infants were sleeping in adult beds and ten were sleeping in cribs or bassinets. Table 25 shows preventable factors for all unexpected infant deaths in 2007.

Table 25. Preventable Factors for Unexpected Infant Deaths, Arizona 2007		
Factor*	Number	Percent
Lack of supervision	60	42%
Co-sleeping	59	41%
Drugs and/or alcohol	44	31%
Unsafe sleep position	30	21%
Infant exposure to smoking (pre- or postnatal)	19	13%
<b>*More than one factor may have been identified for each death</b>		



## APPENDIX A: CHILD DEATHS BY AGE GROUP

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The following section of the report provides information on the causes and manners of child deaths by age group. The information provided for each age group can be used to guide prevention efforts within each stage of development. For the past three years, 100 percent of child deaths in Arizona have been reviewed, and data from 2005, 2006, and 2007 are included in the following section.

### The Neonatal Period, Birth Through 27 Days

As has been observed in previous years, the neonatal period had the largest number of deaths. In 2007, 42 percent of child deaths in Arizona were among children younger than 28 days (n=485). Although the neonatal period was the age group with the largest number of deaths, it was also the age group with the fewest number of preventable deaths (nine percent, n=42).

Ninety-five percent of neonatal deaths were due to natural causes (n=463). More than half of the deaths were due to prematurity (58 percent, n=281). Table 26 shows causes of death among infants younger than 28 days.

Table 26. Deaths Among Children Ages Birth Through 27 Days by Cause and Manner, Arizona 2007 (n=485)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Prematurity				281		281
Medical*				179	1	180
Motor vehicle crash	5					5
Suffocation	5					5
Undetermined		1			3	4
SIDS				4		4
Other	2				2	4
Blunt force trauma		1				1
Drowning/submersion		1				1
<b>Total</b>	<b>12</b>	<b>3</b>	<b>0</b>	<b>464</b>	<b>6</b>	<b>485</b>
*Excluding SIDS and prematurity						

Cause of death distributions among neonates were similar in 2006 and 2007. There was a two percent decline in the percentage of prematurity (58 percent, n=281). There were increases in the percentages of SIDS, motor vehicle-related deaths, and suffocations. Table 27 shows deaths among neonates by cause for 2005 through 2007.

Table 27. Deaths Among Children Birth Through 27 Days by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Prematurity	263	61%	263	60%	281	58%
Medical*	155	36%	168	38%	180	37%
Other non-medical	1	0%	4	1%	5	1%
Undetermined	3	1%	2	0%	4	1%
SIDS	3	1%	1	0%	4	1%
Motor vehicle crash	4	1%	1	0%	5	1%
Suffocation	3	1%	1	0%	5	1%
Exposure	1	0%	0	0%		
Drowning	1	0%	0	0%	1	0%
<b>Total</b>	<b>434</b>		<b>440</b>		<b>485</b>	
*Excluding SIDS and prematurity						

Manner of death distributions among neonates were similar in 2006 and 2007, although there were more deaths due to accidents among neonates in 2007. There was a smaller percentage of natural deaths in 2007 compared to 2006 and a larger percentage of deaths of undetermined manner. Table 28 shows deaths among children younger than 28 days by manner for 2005 through 2007.

Table 28. Deaths Among Children Ages Birth Through 27 Days by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Natural	421	97%	432	98%	464	96%
Accident	7	2%	2	0%	12	2%
Homicide	3	1%	4	1%	3	1%
Undetermined	3	1%	2	0%	6	1%
Suicide	0	0%	0	0%	0	
<b>Total</b>	<b>434</b>		<b>440</b>		<b>485</b>	

### **The Post-Neonatal Period, 28 Days Through 365 Days**

During 2007, 225 children died who were between their 28<sup>th</sup> day of life and their first birthday. In 2007, 38 percent of deaths among children ages 28 days through 365 days were determined to have been preventable (n=85). The majority of deaths in this age group were due to natural causes (65 percent, n=147). Fifteen percent of the deaths in this age group were due to SIDS (n=33). Six percent of deaths were due to homicide (n=13). Seventeen percent of deaths were accidental (n=38), and suffocation was the most common cause of accidental deaths (n=19). Table 29 shows deaths among children ages 28 days through 365 days by cause and manner.

Table 29. Deaths Among Children Ages 28 Days Through 365 Days by Cause and Manner, Arizona 2007 (n=225)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical*		2		79	2	83
Prematurity				35		35
SIDS				33		33
Suffocation	19	2				21
Undetermined					20	20
Other non-medical	4	1			5	10
Blunt force trauma		8				8
Motor vehicle crash	7					7
Drowning	5					5
Exposure	2					2
Poisoning	1					1
<b>Total</b>	<b>38</b>	<b>13</b>	<b>0</b>	<b>147</b>	<b>27</b>	<b>225</b>
*Excluding SIDS and prematurity						

Compared to 2006, there was an increase in the percentage of prematurity deaths among this age group in 2007. Table 30 shows deaths among children ages 28 days through 365 days by cause for 2005 through 2007.

Table 30. Deaths Among Children Ages 28 Days Through 365 Days by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Medical*	122	52%	89	43%	83	37%
Prematurity	21	9%	29	14%	35	15%
SIDS	34	15%	27	13%	33	15%
Undetermined	17	7%	14	7%	25	11%
Suffocation	19	8%	24	12%	21	9%
Blunt force trauma	7	3%	8	4%	8	3%
Motor vehicle crash	1	0%	2	1%	7	3%
Fire/burn	3	1%	1	0%	6	3%
Other non-medical	5	2%	8	4%	5	2%
Drowning	1	0%	2	1%	5	2%
Exposure	1	0%	0	0%	2	1%
Poisoning	1	0%	2	1%	1	0%
Hanging	1	0%	0	0%	1	0%
<b>Total</b>	<b>233</b>		<b>206</b>		<b>225</b>	
*Excluding SIDS and prematurity						

Natural deaths declined by three percent in 2007. There was a large decline in the percentage of homicides among this age group (from 12 percent in 2006 to six percent in 2007). The percentage of accidents increased from 12 percent to 17 percent. Table

31 shows deaths among children ages 28 days through 365 days by manner for 2005 through 2007.

Table 31. Deaths Among Children Ages 28 Days Through 365 Days by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Natural	178	76%	140	68%	147	65%
Accident	19	8%	25	12%	38	17%
Undetermined	9	4%	12	6%	27	12%
Homicide	27	12%	29	14%	13	6%
Suicide	0	0%	0	0%	0	0%
<b>Total</b>	<b>233</b>		<b>206</b>		<b>225</b>	

### Children, One Through Four Years of Age

During 2007, 113 children died between their first and fifth birthdays. Fifty-three percent of deaths among children ages one through four years were determined to have been preventable (n=60). Forty percent of deaths in this age group were due to medical causes (n=45). There were 21 deaths due to motor vehicle crashes (18 percent) and 12 deaths due to drownings (11 percent). Forty percent of deaths were due to accidents (n=45). Table 32 shows deaths among children ages one through four years by cause and manner.

Table 32. Deaths Among Children Ages One Through Four Years by Cause and Manner, Arizona 2007 (n=113)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical*				45		45
Motor vehicle crash	20	1				21
Drowning	12					12
Undetermined		1			7	8
Blunt force trauma		7				7
Fall/crush	5					5
Prematurity				4		4
Suffocation/choking	2					2
Fire/burn	2					2
Poisoning	2					2
Firearm injury		2				2
Animal attack	1					1
Exposure	1					1
Other injury		1				1
<b>Total</b>	<b>45</b>	<b>12</b>	<b>0</b>	<b>49</b>	<b>7</b>	<b>113</b>
*Excluding SIDS and prematurity						

Compared to 2006, there was an eight percent decline in medical deaths among children ages one through four years and a four percent decline in motor vehicle-related

deaths. There was a two percent increase in blunt force trauma deaths among children in this age group. Table 33 shows deaths among children ages one through four years by cause for 2005 through 2007.

Table 33. Deaths Among Children Ages One Through Four Years by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Medical	56	43%	74	48%	45	40%
Motor vehicle crash	19	15%	34	22%	21	18%
Drowning	20	15%	16	10%	12	11%
Other non-medical	5	4%	4	3%	11	10%
Undetermined	5	4%	7	4%	8	7%
Blunt force trauma	10	8%	6	4%	7	6%
Suffocation/choking	2	2%	5	3%	2	2%
Fire/burn	5	4%	4	3%	2	2%
Firearm injury	0	0%	1	1%	2	2%
Poisoning	4	3%	1	1%	2	2%
Exposure	3	2%	1	1%	1	1%
<b>Total</b>	<b>130</b>		<b>153</b>		<b>113</b>	

Compared to 2006, natural deaths declined by five percent among children ages one through four years during 2007, and there was a two percent decline in accidental deaths. Homicides increased by four percent. Table 34 shows deaths by manner for 2005 through 2007.

Table 34. Deaths Among Children Ages One Through Four Years by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Natural	56	43%	74	48%	49	43%
Accident	54	42%	64	42%	45	40%
Homicide	13	10%	11	7%	12	11%
Undetermined	7	5%	4	3%	7	6%
Suicide	0	0%	0	0%	0	0%
<b>Total</b>	<b>130</b>		<b>153</b>		<b>113</b>	

### **Children, Five Through Nine Years of Age**

During 2007, 67 children died in Arizona between their fifth and tenth birthdays. Forty-six percent of deaths among children ages five through nine years were determined to have been preventable (n=31). Fifty-five percent of deaths in this age group were due to medical causes (n=37), and 19 percent of deaths were due to motor vehicle-related injuries (n=13). There were four accidental drownings in this age group. Table 35 shows deaths among children ages five through nine years by cause and manner.

Table 35. Deaths Among Children Ages Five Through Nine Years by Cause and Manner, Arizona 2007 (n=67)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical				37		37
Motor vehicle crash	13					13
Drowning	4					4
Other injury	1	3				4
Firearm injury	1	2				3
Poisoning	1	1				2
Fire/burn	1					1
Hanging	1					1
Fall/crush	1					1
Blunt force trauma		1				1
<b>Total</b>	<b>23</b>	<b>7</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>67</b>

Between 2006 and 2007, there was a 17 percent decline in motor vehicle crash deaths among children ages five through nine years. There were increases in the percentages of medical deaths and poisonings. Table 36 shows deaths among children ages five through nine years by cause for 2005 through 2007.

Table 36. Deaths Among Children Ages Five Through Nine Years by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Medical	43	51%	30	47%	37	55%
Motor vehicle crash	23	27%	23	36%	13	19%
Other non-medical	2	2%	2	3%	7	10%
Drowning	6	7%	4	6%	4	6%
Poisoning	1	1%	1	1%	2	3%
Fire/burn	6	7%	2	3%	1	1%
Hanging	0	0%	1	1%	1	1%
Blunt force trauma	2	2%	1	1%	1	1%
Suffocation	1	1%	0	0%	1	1%
<b>Total</b>	<b>85</b>		<b>64</b>		<b>67</b>	

There were no homicides among children ages five through nine years in Arizona during 2006, but there were seven homicides in this age group during 2007. There was an eight percent increase in natural deaths and a 16 percent decline in accidental deaths. Table 37 shows deaths among children ages five through nine years by manner for 2005 through 2007.

Table 37. Deaths Among Children Ages Five Through Nine Years by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Natural	43	51%	30	47%	37	55%
Accident	39	46%	32	50%	23	34%
Homicide	3	4%	0	0%	7	10%
Suicide	0	0%	1	1%	0	0%
Undetermined	0	0%	1	1%	0	0%
<b>Total</b>	<b>85</b>		<b>64</b>		<b>67</b>	

### Children, 10 Through 14 Years of Age

Ninety-two children who were between their tenth and fifteenth birthdays died in Arizona during 2007. Fifty-three percent of deaths among children ages 10 through 14 years were determined to have been preventable (n=49). Forty-three percent of deaths in this age group were due to medical causes (n=40) and 29 percent were due to motor vehicle traffic crashes (n=27). Table 38 shows deaths among children ages 10 through 14 years by cause and manner.

Table 38. Deaths Among Children Ages 10 Through 14 Years by Cause and Manner, Arizona 2007 (n=92)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical				40		40
Motor vehicle crash	27					27
Firearm injury	2	3			2	7
Hanging			5		1	6
Other injury			2		2	4
Fall/crush	3					3
Poisoning	1	1				2
Blunt force trauma		1				1
Exposure	1					1
Drowning	1					1
<b>Total</b>	<b>35</b>	<b>5</b>	<b>7</b>	<b>40</b>	<b>5</b>	<b>92</b>

Compared to 2006, medical deaths increased by two percent in 2007, and motor vehicle-related deaths increased by six percent. Firearm fatalities declined by six percent. There were also declines in drownings, suffocations, and exposure deaths. Table 39 shows deaths among children ages 10 through 14 years by cause for 2005 through 2007.

Table 39. Deaths Among Children Ages 10 Through 14 Years by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Medical	32	37%	38	41%	40	43%
Motor vehicle crash	21	24%	21	23%	27	29%
Firearm injury	7	8%	13	14%	7	8%
Hanging	7	8%	3	3%	6	6%
Other non-medical	1	1%	0	0%	4	4%
Fall/crush	0	0%	1	3%	3	3%
Poisoning	4	5%	2	2%	2	2%
Blunt force trauma	1	1%	3	3%	1	1%
Drowning	1	1%	3	3%	1	1%
Exposure	4	5%	4	4%	1	1%
Suffocation	3	3%	4	4%	0	0%
<b>Total</b>	<b>86</b>		<b>92</b>		<b>92</b>	

There was a two percent increase in natural deaths among children ages 10 through 14 years in 2007 and a one percent increase in accidental deaths. Suicides declined by four percent. Table 40 shows deaths among children ages 10 through 14 years by manner for 2005 through 2007.

Table 40. Deaths Among Children Ages 10 Through 14 Years by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Natural	32	37%	38	41%	40	43%
Accident	34	40%	34	37%	35	38%
Suicide	13	15%	11	12%	7	8%
Homicide	5	6%	7	8%	5	5%
Undetermined	2	2%	2	2%	5	5%
<b>Total</b>	<b>86</b>		<b>92</b>		<b>92</b>	

### **Children, 15 Through 17 Years of Age**

During 2007, 161 children ages 15 through 17 years died in Arizona. Seventy-six percent of deaths among children ages 15 through 17 years were determined to have been preventable (n=123). Thirty percent of deaths among this age group were due to motor vehicle crashes (n=49). There were 35 deaths due to natural causes (22 percent). Twenty-two percent of deaths were due to firearm injuries (n=36). There were no deaths due to drowning or blunt force trauma among children in this age group during 2007. Table 41 shows deaths among children ages 15 through 17 years by cause and manner.



Table 41. Deaths Among Children Ages 15 Through 17 Years by Cause and Manner, Arizona 2007 (n=161)						
Cause	Accident	Homicide	Suicide	Natural	Undetermined	Total
Motor vehicle crash	48		1			49
Firearm injury	2	23	11			36
Medical				33	2	35
Poisoning	15		2			17
Hanging			6			6
Other non-medical	2	3	1			6
Exposure	4					4
Undetermined					4	4
Fire/burn	3					3
Other medical				1		1
<b>Total</b>	<b>74</b>	<b>26</b>	<b>21</b>	<b>34</b>	<b>6</b>	<b>161</b>

Compared to 2006, medical deaths increased by eight percent in 2007. Motor vehicle crash deaths declined by ten percent. Hanging deaths declined by five percent, and poisonings increased by nine percent. Table 42 shows deaths among children ages 15 through 17 years by cause for 2005 through 2007.

Table 42. Deaths Among Children Ages 15 Through 17 Years by Cause, Arizona 2005-2007						
Cause	2005		2006		2007	
Motor vehicle crash	66	37%	83	40%	49	30%
Firearm injury	34	19%	46	22%	36	22%
Medical	34	19%	29	14%	35	22%
Poisoning	9	5%	5	2%	17	11%
Other	2	1%	4	2%	7	4%
Hanging	10	6%	19	9%	6	4%
Exposure	10	6%	4	2%	4	2%
Undetermined	2	1%	1	0%	4	2%
Fire/burn	1	1%	2	1%	3	2%
Fall/crush	4	2%	1	0%	0	0%
Blunt force trauma	2	1%	6	3%	0	0%
Drowning	6	3%	6	3%	0	0%
<b>Total</b>	<b>180</b>		<b>206</b>		<b>161</b>	

Compared to 2006, there was a seven percent decline in accidental deaths in 2007 and a five percent decline in suicides. Homicides increased by two percent and natural deaths increased by seven percent. Table 43 shows deaths among children ages 15 through 17 years by manner for 2005 through 2007.

Table 43. Deaths Among Children Ages 15 Through 17 Years by Manner, Arizona 2005-2007						
Manner	2005		2006		2007	
Accident	92	51%	109	53%	74	46%
Natural	35	19%	29	14%	34	21%
Homicide	25	14%	29	14%	26	16%
Suicide	23	13%	36	18%	21	13%
Undetermined	5	3%	3	1%	6	4%
<b>Total</b>	<b>180</b>		<b>206</b>		<b>161</b>	

## **APPENDIX B: ARIZONA CHILD FATALITY REVIEW TEAMS AND ARIZONA DEPARTMENT OF HEALTH SERVICES STAFF**

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### **STATE CHILD FATALITY REVIEW TEAM**

#### **Chair**

Mary Ellen Rimsza, M.D. F.A.A.P.  
Editor, PREP the Curriculum, American Academy of Pediatrics  
Professor of Pediatrics, University of Arizona

#### **Members**

Christy Alonzo  
Governor's Office for Children

Kathryn Bowen, M.D.  
University of Arizona  
College of Medicine

David K. Byers  
Administrative Office of the Courts

Suzanne Cohen  
Maricopa County Attorney's Office

Tim Flood, M.D.  
Arizona Department of Health Services  
Bureau of Health Statistics

Randy Force  
Phoenix Police Department

Wade Kartchner, M.D.  
Navajo County Public Health Services

Bonnie Marcus  
Administrative Office of the Courts

Janice Mickens  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Gaylene Morgan  
Office of the Attorney General

Frank Pavone  
Luke Air Force Base

Beth Rosenberg  
Children's Action Alliance

Shannon Shivers  
Arizona Department of Health Services  
Division of Behavioral Health Services

Kim Simmons  
Arizona Department of Economic Security  
Division of Developmental Disabilities

Sheila Sjolander  
Arizona Department of Health Services  
Bureau of Women's and Children's Health

Patricia Stevens  
Maricopa County Attorney's Office

Roy Teramoto, M.D.  
Indian Health Services

Darren Tungovia  
Navajo Nation Executive Office

David Winston, M.D.  
Pima County Medical Examiner

#### **Consultants:**

Tomi St. Mars  
Arizona Department of Health Services  
Bureau of Women's and Children's Health

Nancy Quay, R.N.  
Phoenix Children's Hospital

## **APACHE COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Diana Ryan  
Apache Youth Council

### **Members**

Gladys Ambrose  
Navajo Nation Division of Social Services

Matrese Avila  
Apache County Sheriff's Office

Criss Candelaria  
Apache County Attorney's Office

Mike Downs  
Little Colorado Behavioral Health Centers

Lieutenant Fred Frazier  
Eagar Police Department

Peggy Hart  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Chief Mike Hogan  
Eagar Police Department

Sergeant Donny Jones  
St. Johns Police Department

Detective Mike Nuttall  
Springerville Police Department

Jim Pierson  
New Hope Ranch

Brenda Plumb  
Apache County Tobacco Youth Prevention  
Program

Ann Russell  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Keli Sine-Shield  
Apache County Tobacco Youth Prevention  
Program

James Sielski, D.O.  
North County Community Health Center

Jim Staffnik, Ph.D.  
St. Johns Schools

Cathy Taylor, M.D.  
North County Community Health Center

Chief Steve West  
Springerville Police Department

Chief Jim Zeiler  
St. Johns Police Department

## **COCHISE COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Hal Thomas, EdD.  
Committee for the Prevention of Child Abuse

### **Recording Secretary**

Paula Peters

### **Members**

Joy Craig  
Arizona Department of Public Safety  
Parent Representative

Vincent Fero  
Arizona Department of Public Safety

Guery Flores, M.D.  
Cochise County Medical Examiner's Office

Tonianne Goebel  
Domestic Violence Specialist

Glenn F. Harris, M.D.  
Psychiatrist

Angela Hillig  
Sierra Vista Police Department

Maureen Kappler  
Cochise County Health Department

Debbie Nishikida  
Arizona Department of Economic Security  
Administration for Children, Youth, and Families

Rebecca Reyes, M.D.  
Pediatrician

Rodney Rothrock  
Cochise County Sheriff's Office

Mary Scott  
Cochise County Prosecutor's Office

## **COCONINO COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Charles Dean  
Catholic Social Services

### **Members**

Michel Begay  
Criminal Investigator  
Tuba City

Barbara Bosch, M.D.  
Flagstaff Pediatric Care

Anitra Cruz  
Arizona Department of Economic Security  
Administration for Children, Youth, and Families

Casey Hale  
Flagstaff Police Department

Terrence C. Hance  
Coconino County Attorney's Office

Diana Holt, P.N.P.  
Children's Health Center of Northern Arizona  
Children's Rehabilitation Services

Dianna Hu, M.D.  
Tuba City Medical Center  
Indian Health Center

Roberta J. McVickers  
Coconino County Attorney's Office

Special Agent Terry Wade  
U.S. Federal Bureau of Investigation

Lawrence Czarnecki, D.O.  
Coconino County Medical Examiner's Office

## **GILA COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Jean M. Oliver  
Time Out, Inc.

### **Members**

Lucinda Campbell, R.N., B.S.N.  
Gila County Health Department

Detective Matt VanCamp  
Payson Police Department

Diana Dunks  
Arizona Department of Economic Security

Paul Williamson  
Arizona Department of Economic Security  
Child Protective Services

Yvonne Harris  
Arizona Department of Economic Security

Katrisha Stuler  
CASA Coordinator

## **GRAHAM COUNTY AND GREENLEE COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Roxann Kopkie  
Parenting Arizona

### **Members**

Sherry Huges, R.N.  
(retired) Nurse

Detective Kendall Curtis  
Thatcher Police Department

Neil Karnes  
Graham County Health Department

Robert Coons, D.O.

Diane Thomas  
Graham County Sheriff's Office

Donna Whitten  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families



## **MARICOPA COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair**

Mary Ellen Rimsza, M.D., F.A.A.P.  
Editor, PREP the Curriculum, American Academy of Pediatrics  
Professor of Pediatrics, University of Arizona

### **Coordinator**

Susan Newberry, L.B.S.W., ME.d

### **Assistant Coordinator**

Arielle Baldwin, B.A.

### **Members**

Cari Berg  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Vjollca Berisha, M.D., M.P.H.  
Maricopa County Health Department

Kathryn Coffman, M.D.  
St. Joseph's Hospital

Suzanne Cohen  
Bureau Chief, Family Violence Bureau  
Maricopa County Attorney's Office

Cindy Copp  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Shawn Cox  
United States Attorney's Office

Frances Baker Dickman, Ph.D., J.D.

Paul Dickman, M.D.  
Phoenix Children's Hospital, Division of  
Pathology

Frank DiModica, Detective  
Phoenix Police Department

Ilene Dode, Ph.D., L.P.C.

Amira El-Ahmadiyyah, L.C.S.W.  
Banner Children's Hospital at Banner  
Desert Medical Center

Naomi Evanishyn, R.S.  
Salt River Pima-Maricopa Indian  
Community

Michelle Fingerman, M.C.  
Childhelp National Hotline

Rebecca Fitzpatrick  
Arizona Department of Economic Security  
Administration for Children, Youth and  
Families

Timothy Flood, M.D.  
Arizona Department of Health Services  
Bureau of Health Statistics

Jeanne Goldston, R.N.  
Phoenix Children's Hospital

Susan Hallett, ME.d, B.S.W.  
Arizona Department of Economic Security  
Office of Community Partnerships and  
Innovative Practices

Sergeant Mike Hill  
Tempe Police Department

Richard Johnson  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

**MARICOPA COUNTY REVIEW TEAM  
CONTINUED**

Sharon Jones  
Hospice of the Valley

Karin Kline, M.S.W.  
Arizona Department of Economic Security  
Division of Children, Youth, and Families

Sergeant Patrick Kotecki  
Phoenix Police Department

Detective Chris Loeffler  
Phoenix Police Department

Terence Mason, R.N.  
Mesa Fire Department

Sandra McNally, M.A., L.I.S.A.C.  
EMPACT

Sergeant Chris Moore  
Phoenix Police Department

Christa Morgan  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Deborah Perry, R.N.  
Phoenix Children's Hospital

Purvi Patel, M.P.H.  
Maricopa County Department of Public  
Health

Sergeant Jennifer Pinnow  
Arizona Department of Public Safety

Kindra Portillo  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Nancy Quay, R.N.  
Phoenix Children's Hospital

Alana Shacter, M.P.H.  
Arizona Department of Health Services  
Bureau of Women's and Children's Health

Wendy Shepherd, B.S.  
Childhelp National Headquarters

Sergeant Mike Smallman  
Phoenix Police Department

Laurie Smith, M.S.N, P.C.N.S.-B.C.  
Banner Children's Hospital at Banner  
Desert Medical Center

Connie Smyer, Attorney

Marilynn SoRelle, L.P.C.  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Katrina Taylor, B.S.W.  
Childhelp National Hotline

Jon Terpay, Commander  
Buckeye Police Department

Amy Terreros, M.S., R.N., C.P.N.P.  
Phoenix Children's Hospital

Denis Thirion, M.A.  
EMPACT

Rick Van Galder, Sergeant  
Mesa Police Department

Zannie Weaver  
U.S. Consumer Product Safety Commission

Detective Sergeant David L. Wilson  
El Mirage Police Department

Joseph Zerella, M.D.

Stephanie Zimmerman, M.D.  
Phoenix Children's Hospital

## **MOHAVE COUNTY AND LA PAZ COUNTY CHILD FATALITY REVIEW TEAM**

### **Chairs**

Vic Oyas, M.D.  
Havasupai Rainbow Pediatrics

Daniel Wynkoop  
Psychologist

### **Coordinator**

Leslie DeSantis  
Mohave County Sheriff's Office

### **Members**

B.W. (Bud) Brown  
Mohave Mental Health Clinic

Detective Clint Campbell  
Lake Havasu Police Department

Kay Claborn  
Parent Representative

Sergeant Rusty Cooper  
Kingman Police Department

Lynn Crane  
Parent Representative  
Arizona Children's Association

Detective Mary Emmert  
Bullhead City Police Department

S. Kosha Long  
Arizona Department of Economic Security

Patty Mead  
Mohave County Health Department

Jennifer McNally  
Mohave County Health Department

Betty Munyon  
Mohave County Attorney's Office

Lieutenant Alan Nelson  
La Paz County Sheriff's Office

Detective Steve Parker  
Mohave County Sheriff's Office

Angelica Pichardo  
Mohave County Health Department

Melissa Register  
Mohave County Probation

Lieutenant Steve Smith  
Bullhead City Police Department

Larry Tunforss  
Bullhead City Fire Department

Steve Wilson  
Mohave County Attorney's Office

Rexene Worrell, M.D.  
Mohave County Medical Examiner

## **NAVAJO COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Janelle Virtue, R.N.  
Navajo County Public Health Services

### **Co-chair**

Susie Sandahl, R.N.  
Navajo County Public Health Services

### **Members**

Katy Aday  
WMAT Social Services

Detective Sergeant Roger Conaster  
Winslow Police Department

Detective Sergeant Tim Dixon  
Holbrook Police Department

Detective Sergeant Toni Garver  
Navajo County Medical Examiner's Office

Kirk Grugel  
Navajo County Court Appointed Special  
Advocate's Office

Sherry Herring  
Navajo County Court Appointed Special  
Advocate's Office

Wade Kartchner, M.D.  
Navajo County Public Health Services

Tracy Letcher, R.N., B.S.N.  
Navajo County Public Health Services

Jane McRitchie  
Arizona Baptist Children's Services

Kathleen Norton  
Johns Hopkins Center for American Indian  
Health

Kateri Piecuch  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Sylvia Pender  
Foster Care Review Board

Janet Sanchez  
Indian Health Services

Amy Stradling  
Navajo County Public Health Injury  
Prevention

Andrea Tsatoke, M.P.H.  
Navajo County Community Outreach

Gordon Tsatoke, Jr  
Indian Health Services Injury Prevention

C.J. Wischmann  
Arizona Department of Economic Security  
Child Protective Services

Jan Wolfe, R.N.  
Winslow Indian Health Care Center

## **PIMA COUNTY AND SANTA CRUZ COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair**

Kathryn Bowen, M.D.  
Department of Pediatrics  
University of Arizona

### **Coordinators**

Becky Lowry

### **Members**

Susan Anderson University of Arizona	Laura Kirsch, Doctoral Student School of Psychiatry University of Arizona
Judith Becker, Ph.D. Psychiatrist	Christie Kroger Arizona Department of Economic Security Administration for Children, Youth, and Families
Sergeant Tim Brunenkant Marana Police Department	Sergeant Jesus Lopez Pima County Sheriff's Department
Captain Norm Carlton Tucson Fire Department	Stacey Meade Epidemiologist Community Representative
Marty Fuentes Tohono O'odam Police Department	Joan Mendelson Private Attorney
Detective Vincent Garcia Tohono O'odam Police Department	Brenda Neufeld, M.D. Indian Health Services
Amy Gomez Pima County Attorney's Office	Luana Pallanes Pima County Health Department
Lori Groenewold, M.S.W. Children's Clinics for Rehabilitation Services	Bruce Parks, M.D. Pima County Medical Examiner's Office
Karen Harper Southern Arizona Children's Advocacy Center	Eric Peters Pima County Medical Examiner's Office
Lisa Hulette Pima County Health Department	Cindy Porterfield, M.D. Pima County Medical Examiner's Office
Penelope Jacks Children's Action Alliance – Southern Arizona	Carol Punske, M.S.W. Arizona Department of Economic Security Administration for Children, Youth, and Families
Lynn Kallis Pilot Parents of Southern Arizona	

**PIMA COUNTY AND SANTA CRUZ COUNTY  
REVIEW TEAM CONTINUED**

Barbra Quade  
Jewish Family Services

Audrey Rogers  
Pima County Health Department

Laurie San Angelo  
Attorney General's Office

Tina Tarin, MEd.  
Tucson Fire Department

Captain Robert Torres  
Tucson Fire Department

Christine Trueblood  
CODAC-Healthy Families

Angela Tuzzolino  
Arizona Department of Economic Security  
Child Protective Services

Sergeant Carlos Valdez  
Tucson Police Department

Donald Williams  
Indian Health Services

## **PINAL COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Brandy Hall  
Against Abuse, Inc.

### **Members**

Mary Allen  
Pinal County Health Department

Pat Carter  
Pinal County Medical Examiner's Office

Larry Cusey  
(retired) United States Navy

Detective Amy DeLeon  
Casa Grande Police Department

Erika Gomez  
Pinal County Health Department

Andrea Kipp  
Pinal County Sheriff's Office

Robert Kull, M.D.  
(retired) Pediatrician

JoAnne Pinto  
Against Abuse, Inc.

James Soler  
Critical Care Nurse

Jill Sosin  
Pinal County Attorney's Office

Mary Thomas  
Pinal County Health Department

Angel Tuzzolino  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Detective Gary Vance  
Coolidge Police Department

Beverly White  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Nicole Wilson  
Pinal County Health Department

## **YAVAPAI COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair/Coordinator**

Barbara Jorgensen, M.S.N., R.N.  
Yavapai County Community Health Services

### **Members**

Karen Dansby, M.D.  
(retired) Pediatrician

Pam Edgerton  
Yavapai County Sheriff's Office

Karen Gere  
Yavapai County Office of the Medical  
Examiner

Dawn Kimsey  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

Dennis McGrane  
Yavapai County Attorney's Office

Kathleen McLaughlin  
Yavapai Family Advocacy Center

LaRayne Ness  
Yavapai Regional Medical Center

Becky Ruffner  
Prevent Child Abuse Arizona

Nancy Russotti  
Family Resource Center Yavapai  
Regional Medical Center

Kathy Swope  
Yavapai County Education Services Agency



## **YUMA COUNTY CHILD FATALITY REVIEW TEAM**

### **Chair**

Patti Perry, M.D.  
Pediatrician

### **Coordinator**

Chip Schneider  
Amberly's Place

### **Members**

Norma Alvarez  
Arizona Department of Economic Security  
Administration for Children, Youth, and  
Families

James Coil  
Yuma County Attorney's Office

Sonny Hixon  
Yuma County Sheriff's Office

Cynthia Koehler, M.D.  
Yuma County Medical Examiner's Office

Detective Debbie Machin  
Yuma Police Department

Jim Miller  
SAFE KIDS  
Yuma County Health Department

Alice Nelson  
Parent Representative

Maria Ortega  
Arizona Department of Economic Security  
Child Protective Services

Diane Umphress  
Advocate  
Amberly's Place

Robert Vigil  
Medical Examiner's Office

**ARIZONA DEPARTMENT OF HEALTH SERVICES**  
**BUREAU OF WOMEN'S AND CHILDREN'S HEALTH**

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**CHILD FATALITY REVIEW PROGRAM**

Jamie K. Smith, M.S., M.P.H., Program Manager

Alana Shacter, M.P.H., Injury and Child Fatality Epidemiologist

Teresa Garlington, Administrative Secretary

Terri Baxter, Administrative Assistant III (Data Quality)

**OFFICE OF ASSESSMENT AND EVALUATION**

Paul Holley, Ph.D., Office Chief

Carolyn Cox, Data Manager

Tia Davis, Data Manager

Marilyn Seiler, Data Manager

LaTonya VanDenburgh, Data Manager

Terry Williamson, Data Manager

**To obtain further information, contact:**  
Arizona Department of Health Services  
Public Health Prevention Services  
Bureau of Women's and Children's Health  
Office of Assessment and Evaluation  
Child Fatality Review Program  
150 North 18<sup>th</sup> Avenue, Suite 320  
Phoenix, AZ 85007  
Phone: (602) 364-1400  
Fax: (602) 164-1496

Information about the Arizona Child Fatality Review Program may be found on the Internet through the Arizona Department of Health Services at:  
<http://www.azdhs.gov/phs/owch/cfr.htm>

ARIZONA DEPARTMENT OF HEALTH SERVICES  
PUBLIC HEALTH PREVENTION SERVICES  
BUREAU OF WOMEN'S AND CHILDREN'S HEALTH  
CHILD FATALITY REVIEW PROGRAM  
150 North 18<sup>th</sup> Avenue, Suite 320  
Phoenix, Arizona 85007  
(602) 364-1400

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